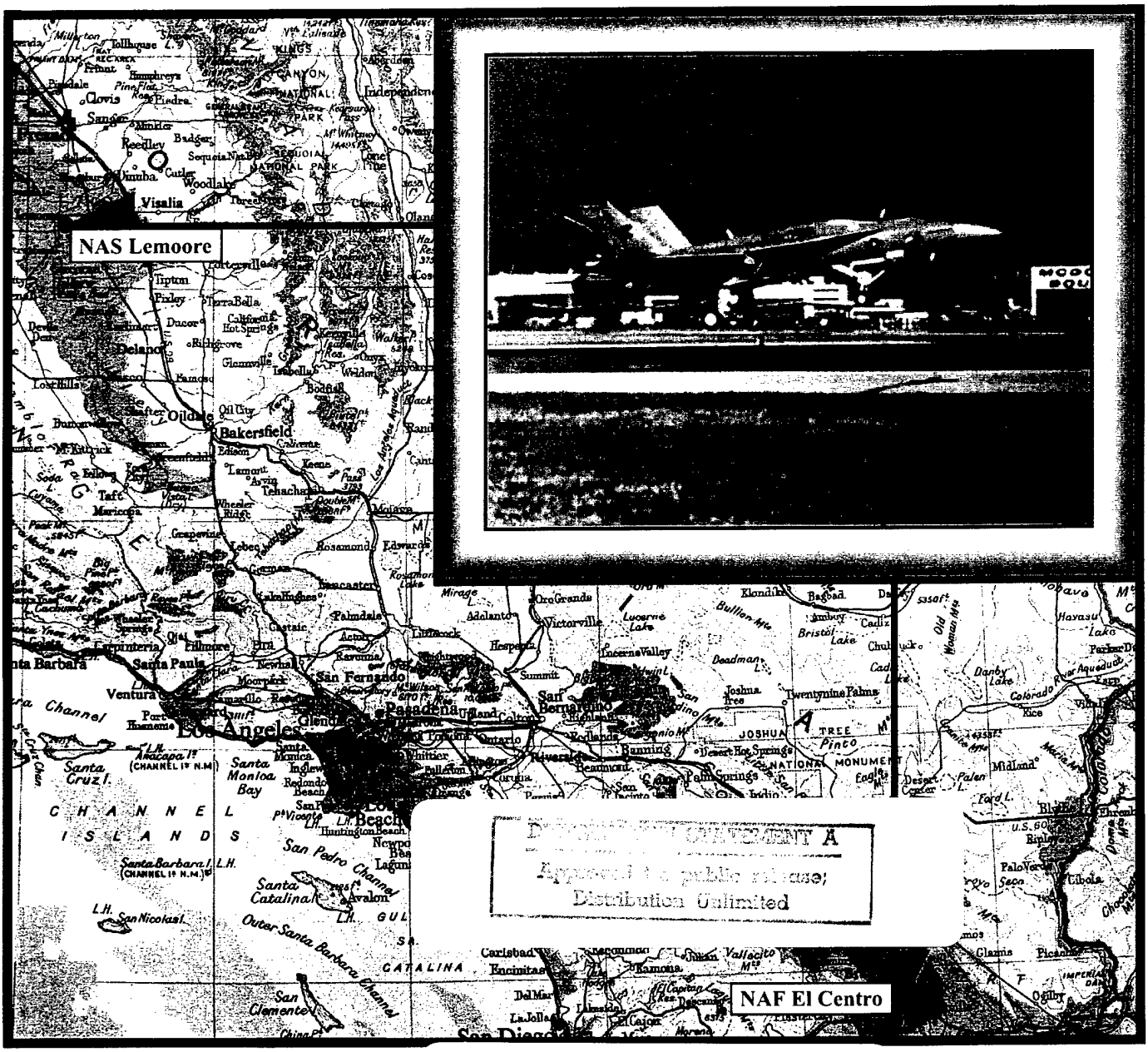
Final Environmental Impact Statement for Development of Facilities to Support Basing US Pacific Fleet F/A-18E/F Aircraft on the West Coast of the United States

Volume I



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May 1998

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Department of the Navy
F/A-18E/F Fleet Introduction Team

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DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CALIFORNIA 94066-5006

5090.1B IN REPLY REFER TO:
7031/EPS-1486
June 2, 1998

Dear Interested Party;

The U.S. Navy invites you to review and comment on the Final Environmental Impact Statement (FEIS) (2 Volumes) prepared to analyze potential impacts to the human and natural environment from the proposed action to develop facilities to support the West Coast basing of the Navy's new F/A-18E/F aircraft. This FEIS has been prepared in accordance with the National Environment Policy Act (NEPA) of 1969 as amended, the Council on Environmental Quality (CEQ) implementing regulations [Title 40 Code of Federal Regulations (CFR) Parts 1500-1508], and the U.S. Navy Environmental and Natural Resources Program Manual OPNAVINST 5090.1B.

The proposed action includes siting 164 F/A-18E/F aircraft, locating associated military personnel and family members, and providing associated training functions at the receiving installation. The two installations considered for the West Coast base are Naval Air Station (NAS) Lemoore and Naval Air Facility (NAF) El Centro. NAS Lemoore is the preferred alternative evaluated in this FEIS.

The FEIS analyzes potential environmental impacts to land use and airspace, visual resources, socioeconomics, cultural resources, traffic and circulation, air quality and General Air Conformity determination, noise, biological resources, water resources, utilities and services, public health and safety, and hazardous materials and waste. Potentially significant but mitigable environmental impacts include impacts to land use and biological resources at NAF El Centro, schools (socioeconomics) at NAS Lemoore, and traffic, air quality, and hazardous materials and storage at both installations. Significant and not mitigable impacts from noise exposure have been identified with locating the proposed action at NAF El Centro.

Volume 2 (Appendix E) contains a detailed Draft General Conformity Determination Analysis under the general rule of the Clean Air Act (40 CFR Part 93 Subpart B; duplicated in 40 CFR Part 51 Subpart W). The Environmental Protection Agency (EPA) general conformity rule requires federal agencies to analyze proposed actions according to standardized procedures and to provide a public review and comment process. The conformity determination process is intended to demonstrate that the proposed federal action:

- will not cause or contribute to new violations of federal air quality standards;
- will not increase the frequency or severity of existing violations of federal air quality standards; and
- will not delay the timely attainment of federal air quality standards.

Public review comments received during the public review period beginning 17 December 1997 and ending 2 February 1998 are located in the Final Environmental Impact Statement (FEIS) in Volume 1, Chapter 12 - Comments and Responses.

This publication commences the 30-day FEIS no-action period starting from June 5, 1998, after which the Navy will review comments received, make final decisions and publish them in its Record of Decision. Please provide any comments in writing to: Surinder Sikand (Code 7031), 900 Commodore Dr., San Bruno CA 04-66-5006 the address below within the 30-day period ending on July 6, 1998.

For any further assistance/information, please call Mr. Sam Dennis, Code 7031, phone (650) 244 3007, Fax (650) 244 3206. E-mail: sldennis@efawest.navfac.navy.mil.

Sincerely,

Samuel L. Dennis

FINAL ENVIRONMENTAL IMPACT STATEMENT (EIS) FOR DEVELOPMENT OF FACILITIES TO SUPPORT WEST COAST BASING OF F/A-18E/F AIRCRAFT

Lead Agency for the EIS:	US Department of the Navy
Title of Proposed Action:	Development of Facilities to Support West Coast Basing of F/A-18E/F Aircraft
Affected Jurisdictions:	Fresno, Kings, and Imperial Counties, California
Designation:	Final Environmental Impact Statement and Final Draft Clean Air Act Conformity Determination

Abstract

The purpose of the proposed action is to develop facilities to support the West Coast basing of the Navy's new F/A-18E/F aircraft. Development of the larger, longer-range F/A-18E/F aircraft was necessary to provide an airframe capable of accommodating new weapons and weapon systems. It is necessary that these aircraft be based on the West Coast to provide a balance in the force structure and to be near the West Coast stationed aircraft carriers on which the aircraft deploy.

The proposed action includes siting 164 F/A-18E/F aircraft, locating associated military personnel and family members, and providing associated training functions at the receiving installation. In addition to the increased staffing and equipment levels, the proposed action would increase Navy activity and flight operations at the receiving installation. Specific facilities will be required to support the training operations and associated personnel. The two installations considered for the West Coast base are Naval Air Station (NAS) Lemoore and Naval Air Facility (NAF) El Centro. NAS Lemoore is the preferred alternative evaluated in this environmental impact statement (EIS).

This EIS evaluates the potential impacts to the human and natural environment that may result from development of facilities to support Navy basing of aircraft and personnel at a naval air station on the West Coast. This EIS has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 as amended, (42 United States Code [USC] §§ 4321 et seq. [1997]), the Council on Environmental Quality (CEQ) implementing regulations, (40 Code of Federal Regulations [CFR] §§ 1500-1508 [1997]), and the Navy's NEPA implementing regulations (Chief of Naval Operations Instruction [OPNAVINST] 5090.1B [1994]).

The EIS analyzes potential environmental impacts to land use and airspace, visual resources, cultural resources, socioeconomics, traffic and circulation, air quality, noise, biological resources, water resources, utilities and services, public health and safety, and hazardous materials and waste. Potentially significant but mitigable environmental impacts include impacts to land use and airspace at NAF El Centro, schools (socioeconomics), traffic, air quality, biological resources at NAF El Centro, and hazardous materials and storage at both installations. Significant and not mitigable impacts to noise have been identified at NAF El Centro.

Prepared by:
US Department of Defense, Department of the Navy

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May 1998

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LIST OF ACRONYMS AND ABBREVIATIONS

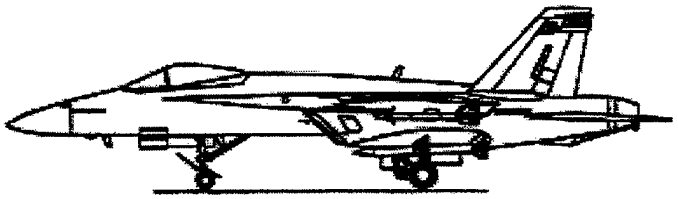
$\mu g/m^3$	micrograms per cubic meter
ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing material
ADT	average daily trips
AEWWINGPAC	Airborne Early Warning Wing Pacific
AFB	Air Force base
AGL	above ground level
AHERA	Asbestos Hazardous Emergency Response Act
AIB	applied instruction building
AICUZ	air installation compatible use zone
AIMD	Aircraft Intermediate Maintenance Department
AIRFA	American Indian Religious Freedom Act
APCD	air pollution control district
APE	area of potential effect
APZ	accident potential zone
AQMD	air quality management district
ARTCC	air route traffic control center
ASD	Aviation Supply Department
AST	aboveground storage tanks
ATC	authority to construct
ATCAA	air traffic control authorized airspace
ATE	automated test equipment
BACT	best available control technology
BASH	bird air strike hazard
BEA	Bureau of Economic Analysis
BEAP	base exterior and architecture plan
BEQ	bachelor enlisted quarters
BMPs	best management practices
BOD	biochemical oxygen demand
BOQ	bachelor officers quarters
BP	before present
BRAC	Defense Base Closure and Realignment Commission
BTU	British thermal unit
BUPERS	Bureau of Naval Personnel
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CALA	combat aircraft loading area
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCB	Complex Control Board
CCF	Control Coordinating Facility
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cfd	cubic feet per day
CFR	Code of Federal Regulations
CHSC	California Health and Safety Code
CINCPACFLT	Commander-in-Chief US Pacific Fleet
cm	centimeters
cmd	cubic meters per day

CMWD	Calleguas Municipal Water District
CNEL	community noise equivalent level
CNO	Chief of Naval Operations
CNPS	California Native Plant Society
CO	carbon monoxide
COE	Corps of Engineers
COMNAVAIRPAC	Commander Naval Air Force Pacific Fleet
CONUS	Continental United States
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
CWA	Clean Water Act
CWC	California Water Code
dB	decibel
dBA	A-weighted decibel
DBCRA	Defense Base Closure and Realignment Act
DDT	dichlorodiphenyltrichloroethane
DEIS	draft environmental impact statement
DERP	Defense Environmental Restoration Program
DHS	California Department of Health Services
DOD	Department of Defense
DRMO	Defense Reutilization and Marketing Office
DTSC	California Department of Toxic Substances Control
DWR	Department of Water Resources
EA	environmental assessment
EIS	environmental impact statement
EMR	electromagnetic radiation
EMT	emergency medical technician
EOD	explosive ordnance disposal
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ESQD	explosive safety quantity distance
FAA	Federal Aviation Administration
FCLP	field carrier landing practices
FEMA	Federal Emergency Management Agency
FFSRA	Federal Facility Site Remediation Agreement
FHWA	Federal Highway Administration
FICON	Federal Interagency Committee on Noise
FIFRA	Federal Insecticide Fungicide and Rodenticide Act
FIRM	flood insurance rate map
FL	flight level
FRS	fleet replacement squadron
FS	feasibility study
FTA	Federal Transit Authority
FY	fiscal year
GCA	Ground Controlled Approach
gpd	gallons per day
ha	hectare
HABS	historic American building survey
HAER	historic American engineering record
ha-m	hectare-meters

HERF	hazards of electromagnetic radiation to fuel
HERO	hazards of electromagnetic radiation to ordnance
HERP	hazards of electromagnetic radiation to personnel
HRS	hazard ranking system
HSWA	Hazardous and Solid Waste Amendments
IAS	initial assessment study
ICS	Imperial County Sanitation
IDC	independent duty corpsman
IFR	instrument flight rules
IID	Imperial Irrigation District
IR	Installation Restoration
IR	instrument route
IRP	Installation Restoration Program
IWTP	industrial wastewater treatment plant
JATO	jet assisted take-off
JDISS	Joint Deployable Imagery Support System
JPPB	Joint Policy and Planning Board
KCWMA	Kings County Waste Management Authority
kg	kilogram
km	kilometer
km^2	square kilometers
KV	kilovolt
kWh	kilowatt-hour
l	liter
L_{50}	maximum acceptable noise levels at 50 percent of the time
Ldn	day-night average sound level
LBP	lead-based paint
LCP	Local Coastal Program
Leq	equivalent noise levels
LOS	level of service
Lpd	liters per day
m	meters
m^2	square meters
m^3	cubic meters
MCAS	Marine Corps Air Station
MCB	Marine Corps Base
mgd	million gallons per day
mg/L	milligrams per liter
mgy	million gallons per year
MILCON	military construction
mLd	million liters per day
MLLW	mean lower low waterline
mLy	million liters per year
MMPA	Marine Mammal Protection Act
MOA	military operations area
MOU	memorandum of understanding
MSA	major statistical area
msl	mean sea level
MTR	military training route
mVA	million volts per ampere

MW	megawatts
NA	not applicable
NAB	Naval Amphibious Base
NACIP	Naval Assessment and Control of Installation Pollutants Program
NAESU	Naval Aviation Support Engineering Unit
NAF	Naval Air Facility
NAFELCINST	Naval Air Facility El Centro Instruction
NAGPRA	Native American Graves Protection and Repatriation Act
NALF	Naval Auxiliary Landing Field
NAMTRA	Naval air maintenance training
NAS	Naval Air Station
NASLEMINST	Naval Air Station Lemoore Instruction
NAVAIR	Naval Air Systems Command
NAWS	Naval Air Weapons Station
NCP	national contingency plan
NEPA	National Environmental Policy Act
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NEX	Naval Exchange
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NMAC	Near mid-air collision
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
NOTAM	notice to airmen
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPL	national priorities list
NRHP	National Register of Historic Places
NZ	noise zone
O_3	ozone
OPNAVINST	Naval Operations Instruction
OSHA	Occupational Safety and Health Administration
OSWER	Office of Solid Waste and Emergency Response
OTF	operational trainer facility
OWS	oil/water separators
PA	physician's assistant
PA	preliminary assessment
PCB	polychlorinated biphenyl
pCi/L	picocuries per liter
PG&E	Pacific Gas and Electric Company
PHWA	Port Hueneme Water Agency
PL	public law
PM_{10}	particulate matter (inhalable)
ppm	parts per million
psi	pounds per square inch
PTO	permit to operate
RA	remedial action
RAP	remedial action plan
RATCF	radar air traffic control facility
RCRA	Resource Conservation and Recovery Act
RD	remedial design

RDT&E	Research Development Testing and Evaluating
RI	remedial investigation
ROD	record of decision
ROG	reactive organic compound
RONA	Record of Non-applicability
RTV	rational threshold value
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCE	Southern California Edison
SCGC	Southern California Gas Company
SCIF	special compartmented information facility
SD	site discovery
SHPO	State Historic Preservation Office (California)
SI	site inspection
SIP	state implementation plan
SITREP	situation report
SJVAB	San Joaquin Valley Air Basin
SJVUAPCD	San Joaquin Valley Unified Air Pollution Control District
SO_2	sulfur dioxide
SOCALOPAREA	Southern California Operations Area
SOP	standard operating procedures
SOx	sulfur oxides
SPCC	spill prevention control and countermeasure
SR	state route
SRA	subregional area
SWAT	special weapons and tactics team
SWMU	solid waste management unit
SWPPP	storm water pollution prevention plan
SWRCB	State Water Resources Control Board
t	tonnes
TACAN	Tactical Air Navigation System
TBD	to be determined
TCM	transportation control measures
TDS	total dissolved solids
TSCA	Toxic Substances Control Act
TRACON	Terminal radar approach control
TSS	total suspended solids
USC	United States Code
USFWS	US Fish and Wildlife Service
UST	underground storage tanks
UWCD	United Water Conservation District
UXO	unexploded ordnance
v/c	volume-to-capacity ratio
VFR	visual flight rules
VR	visual route
WAPA	Western Area Power Administration
WQCP	water quality control plan



EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY

This environmental impact statement (EIS) evaluates the environmental impacts from developing facilities to support F/A-18E/F aircraft, military personnel, and family members at a naval air station on the West Coast of the United States. This document has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 as amended (42 United States Code [USC] §§ 4321 et seq. [1994]), the Council on Environmental Quality (CEQ) implementing regulations (40 Code of Federal Regulations [CFR] §§ 1500-1508 [1997]), and Navy guidelines (Chief of Naval Operations Instruction [OPNAVINST] 5090.1B [1994]). The federal action evaluated in this EIS is that of basing 164 F/A-18E/F aircraft and associated personnel on the West Coast, representing an increase in Pacific Fleet based aircraft. F/A-18E/F aircraft operate from an aircraft carrier as strike fighters, combining the capabilities of bombers (strikers) with those of aerial combatants (fighters). The F/A-18E is a single-seat aircraft, while the F/A-18F is a dual-seat aircraft.

PURPOSE OF THE PROPOSED ACTION

The purpose of the proposed action is to identify a site on the West Coast of the United States suitable for facilities and functions for basing and operating 164 F/A-18E/F aircraft. In addition to the aircraft, the proposed action includes locating military personnel and family members to the receiving installation. The installations considered in detail for the West Coast base are Naval Air Station (NAS) Lemoore and Naval Air Facility (NAF) El Centro, in the State of California.

NEED FOR THE PROPOSED ACTION

The F/A-18E/F aircraft incorporates major operational improvements over existing aircraft that the Navy considers integral to combat capability. These aircraft will replace older and outdated aircraft models that cannot accommodate new weapons and weapons systems. It is necessary for the squadron aircrew and technicians to continually train with the aircraft and for the aircraft to be operated as integral parts of the carrier airwing team with which they will deploy. It is also necessary that these aircraft be based on the West Coast to provide a balanced

force structure and to be near the West Coast homeported aircraft carriers on which the aircraft deploy.

PUBLIC SCOPING

Public comment was solicited through notices published in the *Federal Register* and local newspapers, public meetings held in the vicinity of the alternative receiving installations, and direct mail. The public was notified of the Navy's intent to prepare this EIS by a notice of intent (NOI), published in the *Federal Register* on April 23, 1997.

During the scoping period 36 people provided oral comments. In addition, 30 written comments were received during the scoping period. Residential noise, noise over public lands, safety, biological resources, air quality, socioeconomics, and airspace use were the main issues identified in the scoping process. A summary of the scoping issues and comments are included in Appendix A.

PUBLIC REVIEW PROCESS

A Notice of Availability (NOA) of the Draft EIS was published in the Federal Register on December 12, 1997 (Volume 62, Number 239). A copy of the NOA is provided in Appendix A. Public hearings were held on January 7, 1998 in Lemoore, California and on January 8, 1998 in El Centro, California. Seventy-seven written comment letters were received on the Draft EIS and are responded to in the Final EIS. Five people provided oral comments at the Lemoore hearing and four people commented at the El Centro hearing.

PROPOSED ACTION

The proposed action evaluated in this EIS is to provide facilities and functions needed to support the basing and operation of 164 F/A-18E/F aircraft on the West Coast of the United States. In addition to the increased staffing and equipment levels, the proposed action would increase flight operations at the receiving installation. The proposed action would be supported at the receiving installation by expanding or constructing new aircraft maintenance, training, and personnel support facilities. The two installations considered for the West Coast base are NAS Lemoore and NAF El Centro, in the State of California. NAS Lemoore is the preferred alternative evaluated in this EIS with current facilities primarily requiring renovation or adaptation to accommodate the F/A-18E/F aircraft. Some construction or large-scale expansion would be required for aircraft facilities and associated personnel buildings.

Because of Navy policy requiring collocation of most fleet aircraft with the Fleet Replacement Squadron (FRS), the FRS aircraft and fleet squadron aircraft would be based at one receiving facility. This action would result in an increase of 92 aircraft at NAS Lemoore, where the F/A-18C/D strike fighter squadrons are currently based, because 72 of the 164 aircraft would replace existing F/A-18C/D aircraft. Basing the aircraft at NAF El Centro, which does not have existing strike fighter squadrons, would result in an increase of 164 aircraft at that installation.

F/A-18E/F Aircraft Siting Criteria

Alternative sites were developed by first identifying sites eligible for consideration within the purpose and need of the proposed action, then determining site screening criteria to identify suitable candidate sites and to eliminate those that could not be upgraded to meet requirements. Candidate sites that passed the screening criteria then were measured against more specific facility requirements in areas of aircraft operations, training, maintenance, supply, personnel, and housing.

Site Eligibility Criteria

To be eligible for consideration as an F/A-18E/F basing facility, an installation would be required to meet the eligibility criteria described below. These criteria directly support the purpose and need of the proposed action, and installations not meeting these criteria were not considered as candidate sites.

- *All Fleet F/A-18 based within the Commander-in-Chief, US Pacific Fleet (CINCPACFLT) Area of Responsibility.* Normal practice has been to homeport ships and aircraft within the respective fleet Commander-in-Chief's area of responsibility. This concept simplifies logistics, minimizes overhead, and meets Navy goals of minimizing the time spent by personnel away from their homes.
- *Pacific Fleet F/A-18 Based at a Maximum of Two Sites.* Basing Pacific Fleet F/A-18 operational assets at more than two locations is unacceptable because of operational constraints and duplication of costs associated with maintaining and operating the aircraft in multiple locations. It would impede force readiness levels and decrease training effectiveness for F/A-18 aircrew and support personnel. Neither the Navy's current authorized personnel levels nor the Navy's inventory of F/A-18 spare parts and equipment would be able to adequately support such a separation. The Navy's preference is to locate the Pacific Fleet F/A-18s at one site.
- *Location of Fleet Replacement Squadron with Fleet Squadrons.* It is Navy policy to locate the FRS with most of the fleet squadrons it supports, and Navy preference is to base all fleet squadrons together with the FRS.

Site Screening Criteria

Several West Coast sites were considered as candidate sites and evaluated for their ability to meet the following site screening criteria. Those sites best meeting the criteria were selected for detailed analysis in this EIS. Although NAWS Point Mugu was initially considered a potential candidate, subsequent comparison with siting criteria clearly showed that NAWS Point Mugu could not accommodate facility and operational requirements. NAWS Point Mugu was therefore eliminated from consideration in this EIS. Those sites failing to meet a critical component of the criteria were eliminated from further consideration (see Section 2.4 for this analysis).

Field Elevation

Home base field elevation must be less than 1,000 feet above mean sea level (msl) to adequately replicate aircraft flight characteristics experienced at sea level when operating from aircraft carriers.

Training Ranges

The maximum feasible distance to air-to-air and air-to-ground training ranges is 200 nautical miles (NM). Ranges must be equipped with systems sufficient to support advanced F/A-18E/F tactics, and must be of sufficient size to execute those tactics in a reasonably realistic environment.

At Least Two F/A-18 Squadrons Based at Each Installation

F/A-18 squadrons operate from aircraft carriers as part of a carrier airwing, a tactical unit composed of several separate squadrons of different type aircraft. Although they vary slightly, a typical airwing is made up of nine aircraft squadrons or detachments, two or three of which are F/A-18s. Because extensive training is required to achieve the close coordination characteristic of single combat units, an airwing's F/A-18 "sister squadrons" must be based at the same location ashore.

Airfield Tempo of Operations

The level of existing flight activity must be sufficiently low to permit unrestricted operations of the F/A-18 aircraft based there.

24-Hour Aircraft Operations

The ability to conduct 24-hour aircraft operations without restricting normal traffic flow.

Dual Runways

Home base must have dual runways to permit continuous landings in the event the primary runway should become blocked or otherwise unusable.

Field Carrier Landing Practice

The ability to conduct field carrier landing practice (FCLP) at the home field, concurrently with routine aircraft operations, or at a sufficiently configured outlying airfield within 50 NM of the home field.

Site Facility Requirements

The Navy determines specific airfield capacity and infrastructure requirements from guidelines found in the document, *Facility Planning Criteria for Navy and Marine Corps Shore Installations, NAVFAC P-80.* All facility construction also must meet the environmental protection requirements found in OPNAVINST 5090.1B.

Aircraft Operational Facilities

Primary Runway Length. The minimum primary runway length required for the alternatives in this analysis is 9,000 feet.

Secondary Runway Length. The minimum length acceptable for secondary runways at alternatives considered in this analysis is 6,500 feet.

Combat Aircraft Loading Area (CALA). Facilities are required for storing and handling live weapons used by F/A-18E/F aircraft and for loading and arming the aircraft.

Separate Hangar Modules. Individual hangars may contain several modules configured to house specific functions. Each fleet squadron requires a separate hangar module in which to house its maintenance, training, and administrative functions.

Training Facilities

Strike Fighter Weapons School. It is necessary that the Strike Fighter Weapons School be located with the fleet squadron. The school provides training to aircrew on mission planning, tactics, and air-launched weapons release, handling, and loading.

Aircraft Simulators. The complexity of the F/A-18E/F system makes it vital that sophisticated aircraft and weapons system simulators be available for use by both FRS and fleet squadron pilots.

Naval Air Maintenance Training (NAMTRA) Detachment. This training activity requires that personnel be located at the same facility as the aircraft. This activity is used to train personnel in aircraft maintenance.

Aircraft Maintenance Facilities

Organizational Maintenance. The most basic maintenance consisting of day-to-day upkeep and repair performed by the technicians assigned to the squadrons.

Intermediate Level Maintenance. More complex aircraft repairs are conducted at aircraft intermediate maintenance departments (AIMD) by more specialized technicians who repair the inoperative components that the organizational maintenance level has removed from aircraft.

Depot Level Maintenance. This most complex maintenance includes major overhaul, aircraft upgrades, and repair of major airframe damage and would not be required at the selected site.

Supply Facilities

Supply facilities needed for the proposed action include a general warehouse for covered bulk and bin storage, a hazardous-flammable storehouse, receiving space, packing and crating space, secure storage, and administrative space; a general storage shed for gas cylinders and vehicle construction material; and a paved, uncovered open storage area for general supply facilities.

Personnel Support Facilities

Personnel support facilities provide services and goods for personnel and family members affiliated with the proposed action. Several types of facilities are necessary to provide these services, including administrative offices, medical facilities, exchange, commissary, credit union, recreational facilities, youth center, child development center, religious ministry facility, and counseling center.

Housing

Housing must be available for military personnel associated with the proposed action including bachelor enlisted quarters (BEQs), bachelor officer quarters (BOQs), and family housing.

Utilities

In accordance with Navy policy, utilities at the receiving facility would be designed to accommodate demands of aircraft and personnel associated with the proposed action.

DESCRIPTION OF ALTERNATIVES

NAS Lemoore – Preferred Alternative

The 29,823-acre NAS Lemoore base is located approximately 80 miles inland from the Pacific Ocean and half-way between Los Angeles and Sacramento. The cities of Lemoore and Hanford are located approximately 7 miles and 17 miles, respectively, east of the base. The closest large urban center is Fresno, located approximately 35 miles to the northeast. The official mission of NAS Lemoore is to maintain and operate facilities and provide services and material to support operations of aviation activities and units of the operating forces of the Navy and other activities or units as designated by the Chief of Naval Operations (CNO).

Because F/A-18s are currently stationed at NAS Lemoore, most of the facilities necessary for the F/A-18E/F aircraft are available and would require only renovation or adaptation. New construction or large-scale expansion would be required for some aircraft facilities and for associated personnel buildings.

NAF El Centro Alternative

NAF El Centro occupies approximately 2,640 acres in Imperial County, California, approximately 7 miles west of the City of El Centro (the County seat). The base is located approximately 100 miles east of the Pacific Ocean and 65 miles west of Yuma, Arizona. The US/Mexico Border is 12 miles to the south. The primary mission of NAF El Centro is to serve as a support facility for fleet air squadrons performing tactical air training and to provide additional support to other Department of Defense (DOD) components.

Few of the facilities required for supporting the F/A-18E/F aircraft and personnel are available at NAF El Centro. Most aircraft and personnel support facilities

would have to be constructed, including a new runway and associated taxiways necessary for FCLP operations.

No Action Alternative

Under the No Action Alternative, no new or expanded facilities would be constructed at any potential receiving site, and there would be no increase in functional capacity at any site. The No Action Alternative serves as a benchmark for describing and quantifying the incremental impacts of the detailed alternatives. The baseline established for evaluating the impacts of developing facilities to support West Coast basing of the F/A-18E/F aircraft are the current conditions at the receiving sites. This allows the proposed development for each alternative to be compared to a "no action" benchmark.

ALTERNATIVES CONSIDERED BUT ELIMINATED

Initially, nine installations were considered as potential basing sites for the F/A-18E/F squadrons. Following analysis of the operational and facilities requirements for accomplishing the proposed action at these installations, seven sites were eliminated from further consideration because of their inability to meet critical operational criteria (Table ES-1). The sites eliminated from further consideration were NAS Whidbey Island, NAS Fallon, NAWS China Lake, NAWS Point Mugu, NAS North Island, Marine Corps Air Station (MCAS) Miramar, and MCAS Yuma.

Table ES-1
F/A-18E/F Operational Criteria

Installation	Field Elevation	Training Ranges	Capacity 2 Squadrons	Tempo Operations	24-Hour Operations	Dual Runway	FCLP
NAS Whidbey Island	✓	-.-	✓	✓	✓	-.-	✓
NAS Fallon	-.-	✓	-.-	-.-	✓	✓	✓
NAWS China Lake	-.-	✓	✓	-.-	✓	✓	-.-
NAWS Point Mugu	✓	✓	✓	-.-	✓	-.-	-.-
NAS North Island	✓	✓	-.-	-.-	✓	-.-	-.-
MCAS Miramar	✓	✓	-.-	-.-	✓	✓	✓
MCAS Yuma	✓	✓	-.-	-.-	✓	✓	-.-

✓ meets criteria
-.- did not meet operational criteria
Source: US Navy 1997e

ENVIRONMENTAL ANALYSIS

The environmental analysis evaluates the effects of the proposed action on the human and natural environment at the two alternative basing sites. The resource areas analyzed include land use and airspace, visual resources, socioeconomics, cultural resources, traffic and circulation, air quality, noise, biological resources, hydrology and surface water quality, utilities and services, public health and safety, and hazardous materials and waste.

Affected Environment

Chapter 3, Affected Environment describes existing conditions at each of the proposed receiving bases: NAS Lemoore and NAF El Centro. The information serves as baseline data to identify and evaluate any potential impacts that could result from the proposed action. A brief description of the existing environment at each realignment base is provided below.

NAS Lemoore

NAS Lemoore is surrounded by agricultural land. The topography at NAS Lemoore is relatively flat with no visual relief. Buildings, roads, parking lots, landscaped areas, and disturbed annual grasslands cover most of NAS Lemoore administrative and operational areas.

NAF El Centro

Regional land uses surrounding NAF El Centro are almost entirely agricultural. The topography at NAF El Centro is flat with no visual relief. Most of the lands at NAF El Centro have been heavily disturbed and there are no areas of natural vegetation. Some areas are currently developed with structures or paved with a minimum of landscaping. Other areas have been graded or plowed to reduce the fire hazard, while still other areas are used for agriculture.

Environmental Consequences

Chapter 4, Environmental Consequences, evaluates the potential impacts on the environment that would result from implementation of the proposed action at either alternative site. For most impacts, a determination has been made whether it would constitute a significant or less than significant impact. Noise impacts to public lands beneath flight corridors and training ranges has been analyzed but, due to the lack of established noise criteria for these areas, has not been categorized as either significant or less than significant. Mitigation measures are identified for any impacts determined to be significant. Table ES-2 at the end of this chapter summarizes overall impacts for each resource at each alternative site. The following summarizes the environmental consequences associated with each resource area.

Land Use and Airspace

Significant but mitigable impacts would occur at NAF El Centro from locating new housing and administrative facilities in areas exceeding AICUZ noise standards. Housing units would have to be located out of this noise zone to mitigate this impact to a less than significant level.

Significant but mitigable impacts would also occur at NAF El Centro from locating aircraft support facilities within the helicopter imaginary surface restrictions. Modification of the approach-departure path of the helicopter pad to avoid new structures would reduce impacts to a less than significant level.

No significant impacts related to on-base land use, AICUZ compatibility guidelines for safety, compatibility with regional land uses, or airspace operations would occur at NAS Lemoore or NAF El Centro. The increase in aircraft operations at NAS Lemoore or NAF El Centro would not significantly impact any sensitive land uses such as national parks or wilderness areas.

Visual Resources

No significant impacts to visual resources are expected from developing facilities to support basing the F/A-18E/F aircraft at NAS Lemoore or NAF El Centro.

Socioeconomics

Significant but mitigable impacts to schools would occur from implementation of the proposed action at NAS Lemoore. The proposed action would add between 783 and 1,283 school children to the surrounding area. Impact assessment is based on the higher projection. Allocation of impact aid funds from the Department of Education could reduce this impact to a less than significant level. No significant impacts to schools would occur at NAF El Centro.

No significant impacts to population, employment, income, housing, business volume, net government revenues, or recreational and community facilities would result from implementation of the proposed project at NAS Lemoore or NAF El Centro.

Cultural Resources

No significant impacts to cultural resources would occur at NAS Lemoore or NAF El Centro as a result of the proposed action.

Traffic and Circulation

A significant but mitigable impact would occur at NAS Lemoore at the signalized intersection of Grangeville Road and SR-41 during the PM peak hour. No significant impacts to signalized intersections would occur at NAF El Centro.

Significant but mitigable impacts would occur at NAF El Centro at the unsignalized intersections of Bennett Road and Evan Hewes Highway, and Forrester Road and Evan Hewes Highway. No significant impacts to unsignalized intersections would occur at NAS Lemoore.

Less than significant impacts would occur on key street segments from implementation of the proposed action at NAS Lemoore and NAF El Centro. These traffic facilities would continue to operate at uncongested levels during both the AM and PM peak hours.

Air Quality

Significant but mitigable air quality impacts would result from emissions generated by activities associated with the increased air operation from the F/A-18E/F aircraft at NAS Lemoore. Direct and indirect emissions would exceed the relevant

Clean Air Act (CAA) conformity de minimis thresholds for ozone and PM_{10} precursors. A formal CAA conformity determination is required to demonstrate that net emission increases have been addressed as required by the EPA conformity rule. A Final Draft Conformity Determination for the NAS Lemoore Alternative is included in Appendix E.

Significant but mitigable air quality impacts would result from emissions generated by activity associated with the increased air operations from the F/A-18E/F aircraft at NAF El Centro. Direct and indirect emissions would exceed the relevant CAA conformity de minimis thresholds for ozone and PM_{10} precursors. A formal CAA conformity determination is required to demonstrate that net emission increases have been addressed, as required by the EPA conformity rule. A Final Draft Conformity Determination for the NAF El Centro Alternative is included in Appendix E.

Traffic associated with the NAS Lemoore Alternative would have a less than significant effect on ambient carbon monoxide concentrations at the main gate and Grangeville access points to NAS Lemoore. Traffic associated with the NAF El Centro Alternative would have a less than significant effect on ambient carbon monoxide concentrations at access points to NAF El Centro.

Noise

A less than significant noise impact would result from increased aircraft operations associated with implementing the proposed action at NAS Lemoore. F/A-18E/F aircraft operations would increase overall noise levels in the NAS Lemoore vicinity by as much as 5 dBA, but off-base land uses generally would not be exposed to incompatible noise levels. The 65-dB CNEL contour would expand to the north, west, and south of NAS Lemoore. Affected land uses are primarily agricultural, with some rural residential development south of NAS Lemoore. The community of Stratford would remain outside the 60-dB CNEL contour. Because noise generation from the F/A-18E/F is similar to that from the F/A-18C/D, there would be no significant change in noise contours around NAS Lemoore. Less than significant noise impact would result from construction activities and additional traffic at NAS Lemoore.

A significant and not mitigable noise impact would result from increased flight operations associated with basing F/A-18E/F aircraft at NAF El Centro. The addition of 164 F/A-18E/F aircraft at NAF El Centro would increase noise levels within 3 to 5 miles of the base by 5 dB or more. The 65-dB CNEL contour would encompass significant off-base areas. The city of Imperial would be encompassed by the 65-dB CNEL contour, and the community of Seeley would be within the 65- to 75-dB CNEL contour. One school in Seeley and three schools in Imperial could be impacted by CNEL values above 65-dB. Less than significant noise impacts would result from construction activities and additional traffic at NAF El Centro.

Biological Resources

A significant but mitigable impact would occur to the western burrowing owl, a California and federal species of concern, at NAF El Centro. Western burrowing owls were observed during a July 1997 site visit at the intersection of taxiway D and taxiway E, and at an area north of the main runway. A pre-construction survey of the area would be conducted to ensure that no burrowing owls are nesting in the area and to determine if the area is burrowing owl habitat. No Section 7 consultation would be required. No significant impacts on special status species would occur at NAS Lemoore.

No significant impacts to jurisdictional wetlands or vegetation and wildlife would occur from implementation of the proposed action at NAS Lemoore or NAF El Centro.

Hydrology and Surface Water Quality

No significant impacts related to flood hazards, stormwater drainage capacity, surface water quality, or surface or ground water availability would occur from implementation of the proposed action at NAS Lemoore or NAF El Centro.

Utilities and Services

No significant impacts to water supply, wastewater collection and treatment, stormwater collection and treatment, solid waste collection and disposal, natural gas and electric services, child care services, health services, or police and fire protection services would occur from implementation of the proposed action at NAS Lemoore or NAF El Centro. In accordance with Navy policy, utilities at the receiving facility would be designed to accommodate demands generated by aircraft personnel associated with the proposed action.

Public Health and Safety

No significant impacts related to airspace safety, explosive safety, or electromagnetic radiation would occur from implementation of the proposed action at NAS Lemoore or NAF El Centro.

Hazardous Materials and Waste

A significant but mitigable impact would occur at both NAS Lemoore and NAF El Centro from construction of additional fuel storage facilities. Amendment of plans and programs for the new fuel storage area, operation and service requirements for the new fuel storage area, and attention to all regulatory requirements for proper installation and monitoring of the external fuel tank storage area would reduce the risk of public or environmental exposure. These measures, if implemented at either alternative site, would reduce the impact to a less than significant level.

No significant impacts from hazardous materials management, hazardous waste management, Installation Restoration Program sites, asbestos, polychlorinated

biphenyls (PCBs), pesticides, lead, ordnance, or radon would result from implementation of the proposed action at NAS Lemoore or NAF El Centro.

CUMULATIVE IMPACTS

Chapter 5, Cumulative Impacts, evaluates the effects of the proposed action in combination with other reasonably foreseeable actions taking place in the project areas. No potentially significant cumulative effects were identified for visual resources, socioeconomics, cultural resources, noise, biological resources, hydrology and water quality, utilities and services, public health and safety, or hazardous materials and waste at either alternative site. The following summarizes potentially significant cumulative impacts at each of the alternative sites.

NAS Lemoore (Preferred Alternative)

Cumulative projects would contribute to worsening traffic conditions at intersections accessing NAS Lemoore. The addition of cumulative traffic would result in a change in LOS from E to F at the intersections of SR-198/Main Gate during the AM peak hour and Grangeville Road/SR-41 during the PM peak hour. These intersections would operate at unacceptable levels with or without the proposed action.

Cumulative projects identified for the NAS Lemoore area would cause significant cumulative air quality effects. Emissions from possible relocation of E-2 squadrons, in combination with F/A-18E/F activity, would exceed the CAA conformity rule de minimis thresholds for the San Joaquin Valley, thus requiring a formal conformity determination. Cumulative traffic would add incrementally to regional emissions of ozone and PM_{10} precursors.

NAF El Centro Alternative

The cumulative noise impacts at NAF El Centro from the F/A-18E/F and E-2 aircraft would worsen incompatibilities between noise sensitive land uses and AICUZ noise restrictions. Housing and other types of facilities would have to be relocated off base to achieve compatibility with AICUZ noise restrictions. Continuing to use these facilities under existing or future noise conditions would constitute an unavoidable significant cumulative impact.

The addition of cumulative traffic at NAF El Centro would result in a change in LOS from B to F at the unsignalized intersections of Bennett Road/Even Hewes Highway and Forrester Road/Even Hewes Highway during the AM and PM peak hours. Signal installation at these intersections would reduce the impact to a less than significant level

Cumulative projects identified for the NAF El Centro area would cause significant cumulative air quality effects. Emissions from the possible relocation of E-2 squadrons, in combination with F/A-18 E/F activity, would exceed the CAA conformity rule de minimis thresholds for Imperial County, thus requiring a

formal conformity determination. Automotive traffic would contribute cumulatively to regional emissions of ozone and PM_{10} precursors.

OTHER CONSIDERATIONS

Irreversible and Irretrievable Commitment of Resources

Resources that are irreversibly or irretrievably committed to a project are those that are utilized on a long-term or permanent basis. Resources could include non-renewable resources such as metal, wood, fuel, paper, and other natural or cultural resources, and irretrievable resources such as human labor.

The development of facilities to support the West Coast basing of the F/A-18E/F aircraft and associated personnel would require the construction, modification, or expansion of facilities to provide space for operational, training, maintenance, and personnel support. Construction of the proposed facilities would result in an irretrievable commitment of non-renewable resources such as building materials; fuel for aircraft, construction vehicles, and equipment, and other resources, including labor.

Completion of the proposed action would ultimately result in an increase in the number of aircraft and air operations at the receiving installation, and, subsequently, the commitment of fuel and other non-renewable resources would also be increased. Therefore, the proposed action would constitute an irreversible or irretrievable commitment of non-renewable or depletable resources.

Unavoidable Adverse Impacts of the Proposed Action

Unavoidable adverse impacts of the proposed action would be the increase in noise and air quality impacts resulting from increased aircraft operations at each alternative facility.

Relationship Between Short-term Uses and Long-term Productivity

The basing of the F/A-18E/F aircraft would result in both short- and long-term environmental effects. Short-term effects would be primarily related to construction activities, such as construction-related traffic and emissions. Long-term environmental effects would be related to the increase in noise and air quality impacts associated with F/A-18E/F aircraft operations in the project area. The proposed action's long-term benefit of providing jobs and housing at the alternative bases would offset these environmental impacts.

Executive Order 12898

Executive Order 12898, the "Executive Order on Federal Actions to Address Environmental Justice in Minority and Low-income Populations," (Executive Order [EO] 12898, 59 Federal Register 7629 [Section 1-101]) was issued on February 11, 1994 and requires that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental

effects of its programs, policies, and activities on minority populations and low-income populations."

To comply with the executive order, preparation of this EIS included gathering economic, racial, and demographic information to identify areas of low-income and high minority populations in the areas potentially exposed to project impacts; assessing the realignment alternatives for disproportionate impacts resulting from on-site activities associated with the proposed action; and encouraging community participation and input through public hearings and meetings and extensive public notification.

Implementation of the proposed action at NAS Lemoore and NAF El Centro would not result in disproportionately high and adverse environmental effects on minority or low income populations. Construction and operations produced by basing the F/A-18E/F aircraft at either of the proposed receiving installations would be within the historic fluctuations of the economic resources within the project area, and would have beneficial effects on the local economy, job market, and housing availability. Increased noise levels at each installation would not disproportionately affect low-income and minority populations in the area. All races or ethnic groups would be expected to experience both adverse and beneficial effects from basing the F/A-18E/F squadrons at NAS Lemoore or NAF El Centro.

Executive Order 13045

Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks (EO 13045, 62 Federal Register 19885) recognizes that children may suffer disproportionately from environmental health risks and safety risks. These risks arise because children's bodily systems are not fully developed, because they eat, drink, and breathe more in proportion to their body weight, because their size and weight may diminish protection from standard safety features, and because their behavior patterns may make them more susceptible to accidents. Based on these factors, the President directed each federal agency to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children. The President also directed each federal agency to ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks and safety risks.

To comply with this executive order, preparation of this EIS included identifying schools within the project area that could be impacted by the proposed action. The impacts of noise and increases to the student population were considered as part of this EO. The impact of future noise generated by the proposed action was evaluated based on noise contour maps illustrating projected noise levels from aircraft operations at the two receiving installations. The future impact of new students to the school system was evaluated based on the potential of the additional students to exceed existing school capacities.

Because schools in the NAS Lemoore area are either near or over capacity, the additional 783 to 1,283 students generated at NAS Lemoore would significantly affect these schools. School districts may be eligible for compensation for the federally connected students by impact aid, a federal program intended to compensate local school districts for burdens placed on their resources by federal activity. The affected schools near NAF El Centro would be able to accommodate the additional students generated by the F/A-18E/F squadrons at the facility.

Projected noise levels at schools near NAS Lemoore would remain within compatible levels (65-dB CNEL or less) for school facilities and therefore would not adversely affect public schools in the area. Noise levels exceeding 65-dB CNEL would encompass significant off-base areas near NAF El Centro. The City of Imperial would be encompassed by the 65-dB CNEL contour, and the community of Seeley would be within the 65 to 75-dB CNEL contours. Children attending Seeley Elementary School (kindergarten through 8th grade) and three schools in the City of Imperial would be affected by CNEL values above 65-dB. The proposed project at NAF El Centro includes construction of a child development center on base within a 75- to 80-dB noise environment. High noise levels may have a greater influence on children since the ability to communicate or concentrate, the capacities most affected by noise, are still developing in children. Some studies have found that high noise levels may lead to attention and reading deficits, impaired speech perception, and reduced cognitive abilities in children.

Navy development guidelines state that educational facilities should be prohibited within a 75- to 80-dB noise environment. In addition, California law generally prohibits construction of schools in airport 65-dB CNEL contours. Although the child development center is not an educational facility, it is oriented toward children. Construction of the child development center in an incompatible noise environment is therefore identified as a significant and mitigable impact in Section 4.3 of the EIS. Mitigation for this impact involves relocation of the facility off base. There would be no impacts with respect to children's environmental health and safety.

Table ES-2
Summary of Impacts

Impact Issues	NAS Lemoore	NAF El Centro
Land Use and Airspace		
Compatibility with on-base land uses	○	◐
Consistency with AICUZ land use compatibility guidelines: safety	○	○
Consistency with AICUZ land use compatibility guidelines: noise	◐	◑
Exceedance of imaginary surface restrictions	◐	◑
Compatibility with regional land uses	◐	◐
Impacts to airspace operations	◐	◐
Visual Resources		
Visual character	◐	◐
Views	◐	◐
Consistency with applicable plans and policies	◐	◐
Socioeconomics		
Population	◐	◐
Employment	◐	◐
Income	◐	◐
Housing	◐	◐
Business volume	◐	◐
Net government revenues	◐	◐
Schools	◑	◐
Recreational and community facilities	◐	◐
Cultural Resources		
Prehistoric archeological resources	○	○
Traditional cultural properties	○	○
Historic archaeological resources	○	○
Historic architectural resources	○	○
Prehistoric subsurface deposits	○	◐
Historic subsurface deposits	○	◐
Traffic and Circulation		
Signalized intersection LOS	◑	○
Unsignalized intersection LOS	◐	◑
Street segment LOS	◐	◐

LEGEND:
- ● = Significant and not mitigable impact
- ◑ = Significant but mitigable impact
- ◐ = Less than significant impact
- ○ = No impact

Table ES-2
Summary of Impacts *(continued)*

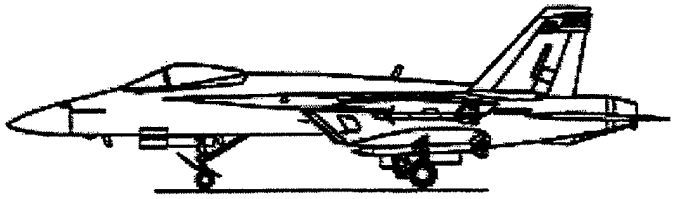
Impact Issues	NAS Lemoore	NAF El Centro
Air Quality		
Clean Air Act conformity	◑	◑
Increased emissions	◑	◑
Intersection carbon monoxide concentrations	◔	◔
Noise		
Construction noise	◔	◔
Aircraft noise	◔	●
Traffic noise	◔	◔
Biological Resources		
Jurisdictional wetlands	○	○
Special status species	◔	◑
Vegetation and wildlife	◔	◔
Hydrology and Surface Water Quality		
Exposure to flood hazards	○	◔
Exceedence of stormwater drainage capacity	◔	◔
Surface water quality degradation	◔	◔
Reduce surface or ground water availability	◔	◔
Utilities and Services		
Water supply	◔	◔
Wastewater collection and treatment	◔	◔
Stormwater collection and treatment	◔	◔
Solid waste collection and disposal	◔	◔
Natural gas and electric services	◔	◔
Child care services	◔	◔
Health services	◔	◔
Police services	◔	◔
Fire services	◔	◔

LEGEND:
● = Significant and not mitigable impact
◑ = Significant but mitigable impact
◔ = Less than significant impact
○ = No impact

Table ES-2
Summary of Impacts *(continued)*

Impact Issues	NAS Lemoore	NAF El Centro
Public Health and Safety		
Airspace safety	◐	◐
Explosive safety quantity distances	◐	◐
Electromagnetic radiation	○	○
Hazardous Materials and Waste		
Hazardous materials management	◐	◐
Hazardous waste management	◐	◐
Installation Restoration Program sites	◐	◐
Asbestos	◐	◐
Polychlorinated biphenyls	○	○
Storage tanks	◑	◑
Pesticides	○	○
Lead	◐	◐
Ordnance	◐	◐
Radon	○	○

LEGEND:
- ● = Significant and not mitigable impact
- ◑ = Significant but mitigable impact
- ◐ = Less than significant impact
- ○ = No impact



1.0 PURPOSE OF AND NEED FOR ACTION

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1.2	NEED FOR THE PROPOSED ACTION	1-1
1.3	SCOPE OF ENVIRONMENTAL REVIEW	1-3
1.4	PUBLIC INVOLVEMENT PROCESS	1-5

CHAPTER 1
PURPOSE OF AND NEED FOR THE PROPOSED ACTION

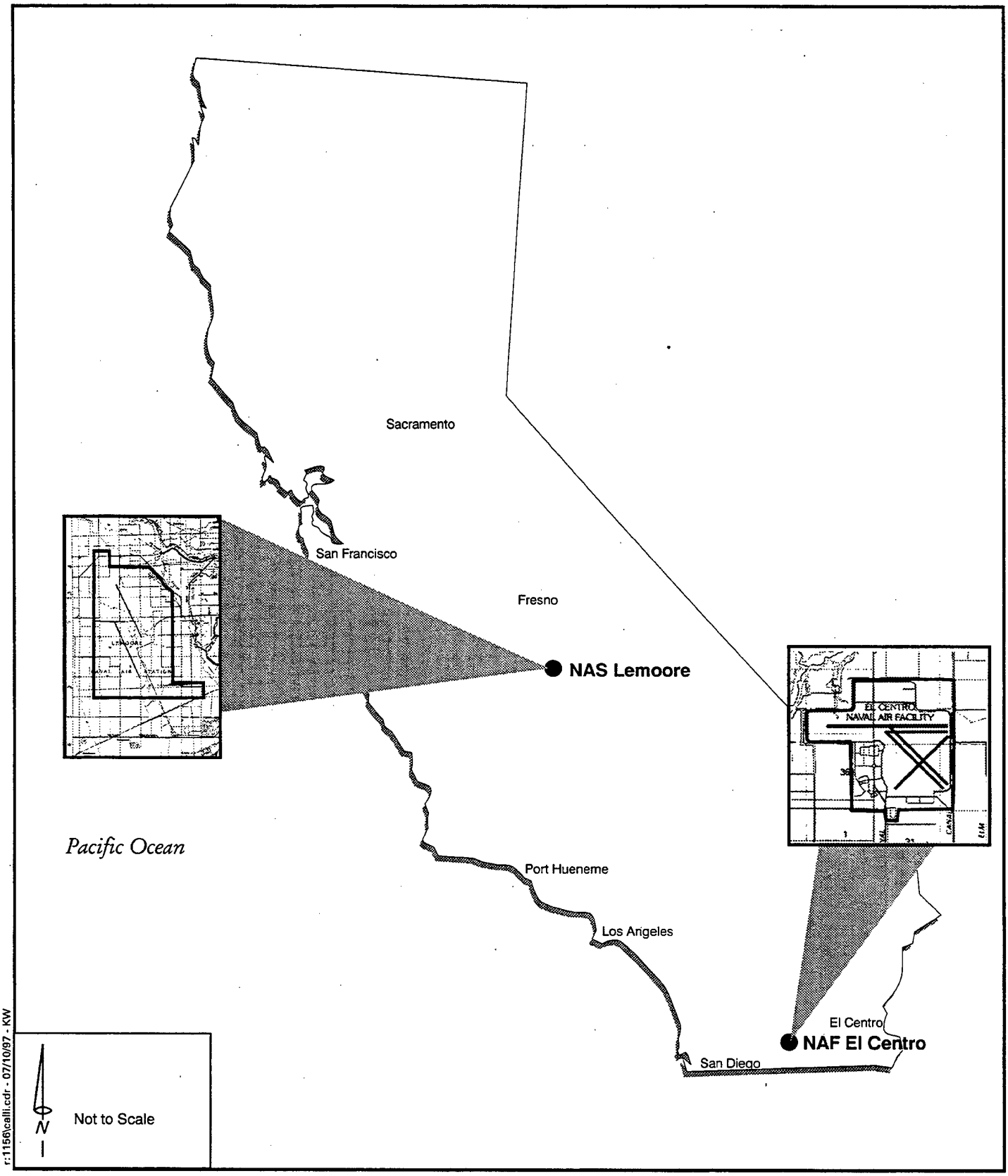
This environmental impact statement (EIS) evaluates the environmental impacts from developing facilities to support F/A-18E/F aircraft, military personnel, and family members at a naval air station on the West Coast of the United States. This document has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 United States Code [USC] §§ 4321 et seq. [1994]), the Council on Environmental Quality (CEQ) implementing regulations (40 Code of Federal Regulations [CFR] §§ 1500-1508 [1997]), and Navy guidelines (Chief of Naval Operations Instruction [OPNAVINST] 5090.1B [1994]). The federal action evaluated in this EIS is basing 164 F/A-18E/F aircraft, associated personnel, and their families, representing an increase in Pacific Fleet based aircraft. F/A-18E/F aircraft operate from an aircraft carrier as strike fighters, combining the capabilities of bombers (strikers) with those of aerial combatants (fighters). The F/A-18E is a single-seat aircraft, while the F/A-18F is a dual-seat aircraft.

1.1 PURPOSE OF THE PROPOSED ACTION

The purpose of the proposed action is to identify a suitable site on the West Coast of the United States for facilities and functions for basing and operating 164 F/A-18E/F aircraft. The installations considered for the West Coast base are Naval Air Station (NAS) Lemoore and Naval Air Facility (NAF) El Centro in California. NAS Lemoore is the preferred alternative evaluated in this EIS because it best meets the operational siting criteria for F/A-18E/F aircraft. The locations of the two air stations are shown on Figure 1-1.

1.2 NEED FOR THE PROPOSED ACTION

The F/A-18E/F aircraft are needed to enhance strike fighter capability and replace older, outdated aircraft models that cannot accommodate new weapons and



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The alternative bases are located in two distinctively different parts of California: the Central Valley and the Imperial Valley.

Proposed West Coast Receiving Installations for the F/A-18E/F Aircraft

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: Tetra Tech 1997.

Figure 1-1

weapons systems. The F/A-18E/F aircraft incorporate major operational improvements over existing aircraft that the Navy considers integral to combat capability. It is necessary for the squadron aircrew and technicians to continually train with the aircraft and for the aircraft to be operated as integral parts of the carrier airwing team with which they will be deployed. It is also necessary that these aircraft be based on the West Coast to provide a balanced force structure and to be near the West Coast homeported aircraft carriers on which the aircraft are deployed.

1.3 SCOPE OF ENVIRONMENTAL REVIEW

This EIS provides information and analyses regarding facility development and operations of the F/A-18E/F aircraft at the alternative installations. This EIS provides the basis for well-informed decisions to be made before the project begins. Each of the following issues will be addressed for each receiving installation that is being considered:

- Land use and airspace;
- Visual resources;
- Socioeconomics;
- Cultural resources;
- Traffic and circulation;
- Air quality;
- Noise;
- Biological resources;
- Hydrology and surface water quality;
- Utilities and services;
- Public health and safety; and
- Hazardous materials and waste.

Two resource categories were eliminated from consideration in the EIS because they were either not identified during the scoping process or the action of locating additional aircraft and personnel at each of the alternative sites would affect such resources only negligibly. These two resource categories are as follows:

Geology, Topography and Soils—All proposed construction projects would require minimal grading on disturbed flat sites without topographic features. The structures would be designed to meet building codes for local and regional seismic conditions and foundation stability.

Public Use Facilities/Access—All proposed construction projects are to be located within the boundaries of naval air installations that are secured naval facilities and that are not designated for public use or access.

1.3.1 Document Organization

This EIS consists of two volumes; Volume 1 contains the main text, and Volume 2 contains the technical appendices. The document's general organization is described below.

Chapter 1, Purpose of and Need for the Proposed Action, provides an overview of the purpose of and need for developing facilities to support basing the F/A-18E/F aircraft on the West Coast. It also describes the EIS content and approach and the public involvement process.

Chapter 2, Proposed Action and Alternatives, describes the proposed action, the site selection criteria, and the two West Coast basing alternatives for developing facilities to support the aircraft. The No Action Alternative and other alternatives considered but rejected also are described. A comparison of facilities required at each alternative base to support the F/A-18E/F aircraft and a summary of significant impacts of each alternative are provided in tables.

Chapter 3, Affected Environment, describes existing environmental and socioeconomic conditions at the alternative bases, NAS Lemoore and NAF El Centro. Each technical section identifies the affected area applicable to each resource.

Chapter 4, Environmental Consequences, describes the potential environmental impacts of the proposed action for each resource from aircraft operations. Impacts are categorized as significant, less than significant, or beneficial. Mitigation measures or standard operating procedures are identified for any impact determined to be significant.

Chapter 5, Cumulative Impacts, identifies impacts from implementing the proposed action in combination with other foreseeable actions at each alternative basing installation. Cumulative impacts are defined as two or more individual effects that, when considered together, are considerable or that compound or increase other environmental impacts.

Chapter 6, Other Considerations, identifies unavoidable adverse impacts to the environment, identifies irreversible and irretrievable commitments of resources, and describes the relationship between short-term uses of the environment and maintenance and enhancement of long-term productivity. Also described are the potential disproportionate adverse impacts on children in accordance with Executive Order 13045 and on low-income or minority populations in accordance with Executive Order 12898.

Chapters 7 through 11 provide background information on coordinating with interested and responsible agencies, as well as a list of references, a list of this document's preparers, the distribution list, and an index.

Technical appendices are provided in a separate volume.

1.4 PUBLIC INVOLVEMENT PROCESS

The EIS process is designed to involve the public in the federal decision-making process. Opportunities to comment on the proposed action were provided during the formal scoping process, and comments received during this period were considered when preparing the draft EIS. Further opportunities for public comment will be provided during the formal review period following completion of the EIS. At the beginning of the F/A-18E/F EIS process, the potential alternative receiving bases included Naval Air Weapons Station (NAWS) Point Mugu, and communities surrounding this base were included in the scoping process. However, NAWS Point Mugu is no longer considered as an alternative base and is not evaluated in this EIS. (See Section 2.4 for more information on alternative bases that were considered but eliminated from detailed consideration.)

Methods to involve the general public, community and environmental groups, elected officials, and federal, state, and local agencies in the EIS process have included the following:

- Creating and updating an extensive mailing list of members of the general public, community and environmental groups, elected officials, and federal, state, and local agencies;
- Publishing in the Federal Register a notice of intent (NOI) to prepare an EIS;
- Publishing notices of public meetings in local newspapers and coordinating media coverage, press releases, and feature articles;
- Conducting public scoping meetings, one at each of the receiving bases under consideration, prior to initiating the environmental study to solicit comments and to identify issues of concern;
- Publishing in the Federal Register; a notice of availability (NOA) of the EIS
- Publishing notices of public meetings on the EIS in local newspapers and coordinating media coverage, press releases, and feature articles, usually in both English and Spanish;
- Conducting two public meetings, one near each of the bases proposed for basing the aircraft, to receive comments on the EIS; and
- Providing a 45-day comment period to solicit written comments on the EIS from responsible agencies and interested parties.

One goal for public involvement, under Executive Order 12898 on Environmental Justice, is to involve affected low-income and minority populations in the public participation process. To achieve this, comments were solicited from a range of associations that could be affected by or interested in the proposed action, public meetings were conducted at easily accessible locations in the local community, and public meetings were announced in both English and Spanish in local newspapers.

1.4.1 Scoping Process

The purpose of scoping is to solicit information, data, and public concerns on any potential environmental or socioeconomic issues associated with the Navy's proposed action. The NOI appeared in the Federal Register on April 23, 1997, and the comment period was closed on May 23, 1997. The scoping process for the EIS included several opportunities for input from the general public, community and environmental groups, politicians, and federal, state, and local agencies. A scoping meeting was held to present the project and to solicit comments at the two alternative site locations. The scoping meeting was announced in a mailing, published in the Federal Register, and advertised in local newspapers. Each announcement included a summary of the proposed action and a brief description of alternatives and environmental issues to be considered in the EIS. Scoping information and concerns received during the scoping period are summarized in Appendix A.

The Navy considered comments received during the scoping process in determining the range of environmental and socioeconomic issues to be evaluated in the EIS. During the EIS scoping process, 36 people provided oral comments. In addition, 30 comment cards, letters, or e-mails containing comments were received during the scoping period. The main issues identified through the scoping process were residential noise, noise over public lands, safety, biological resources, air quality, socioeconomics, and airspace use.

1.4.2 Public Review Process

Public review is an important part of the NEPA process and provides the public and other interested parties with an opportunity to review and comment on the Navy's actions and decisions. The public and other interested parties had 45 days to comment on the draft EIS. After a 30-day public comment period on the final EIS, the Navy will prepare a record of decision (ROD).

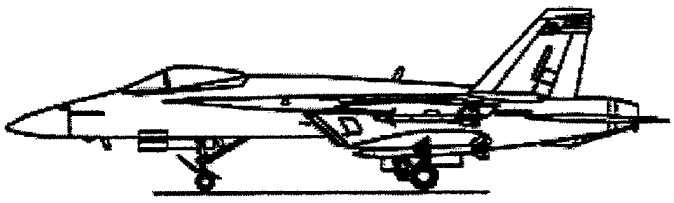
Draft EIS

The NOA appeared in the Federal Register on December 12, 1997, and the comment period was closed on February 2, 1998. Public hearings were held on January 7, 1998, in Lemoore, California, and on January 8, 1998, in El Centro, California. Seventy-two comment letters were received on the draft EIS and are responded to in the final EIS. Five people provided oral comments at the Lemoore hearing, and four people commented at the El Centro hearing. Copies of the transcripts and responses to the comments are included in the comments and responses section of the EIS.

Final EIS

The final EIS responds to and incorporates comments received on the draft EIS. The NOA was published in the Federal Register and in public notices and press releases. As required by NEPA, there will be a 30-day no action review period after the NOA for the final EIS is published. During this period, the public may comment on the adequacy of responses to comments and the final EIS. After that time, the Navy will prepare ROD detailing the decisions on project approval.

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2.0 PROPOSED ACTION AND ALTERNATIVES

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CHAPTER 2
PROPOSED ACTION AND ALTERNATIVES

This chapter describes the Navy planning process and the alternatives considered in the environmental impact statement (EIS). Alternatives considered but eliminated from detailed analysis, and the No Action Alternative required by the National Environmental Policy Act (NEPA) also are described. A comparison of construction and expansion requirements is provided in Table 2-10. Table 2-12 at the end of the chapter summarizes the significant impacts of the proposed action at each of the alternative bases.

NAS Lemoore is the preferred alternative evaluated in this EIS because it best meets the operational siting criteria for F/A-18E/F aircraft (described in Section 2.2 of this chapter) with the least environmental consequences. NAF El Centro also is considered in detail because it also meets minimal criteria and could be upgraded to meet siting criteria. Although not all facility and infrastructure requirements are satisfied at either alternative site, both are considered feasible sites because requirements could be reasonably met through facility upgrades.

2.1 PROPOSED ACTION

The proposed action evaluated in this EIS is to provide facilities and functions to support the basing and operation of 164 F/A-18E/F aircraft on the West Coast of the United States. In addition to increased staffing and equipment levels, the proposed action would increase flight operations at the receiving installation. The proposed action would be supported at the receiving installation by expanding existing or constructing new aircraft maintenance, training, and personnel support facilities. The following provides a more detailed description of the proposed action.

Aircraft— 164 F/A-18E/F aircraft, representing an increase of 92 Pacific Fleet strike fighter aircraft, would be based at the receiving facility. The action would begin in 1999 and would be completed by approximately 2010. A first phase of 92 F/A-18E/F aircraft would include one fleet replacement squadron (FRS) and four

new F/A-18F squadrons. A second phase of 72 F/A-18E/F aircraft would replace existing strike fighter squadrons now based at NAS Lemoore.

Because of Navy policy requiring collocation of most fleet aircraft with the FRS, the FRS aircraft and fleet squadron aircraft would be based at one receiving facility. This action would result in an increase of 92 aircraft at NAS Lemoore, where the F/A-18C/D strike fighter squadrons are currently based, because 72 of the 164 aircraft would replace existing F/A-18C/D aircraft. Basing the aircraft at NAF El Centro, which does not have existing strike fighter squadrons, would result in an increase of 164 aircraft at that installation.

Aircraft Operations— An airfield operation is defined as a single takeoff, a single landing, or passage into and out of tower control in the airspace over the airfield. Airfield operations include takeoffs, landings, touch-and-go patterns, ground control approach (GCA) box patterns (a large loop pattern directed by the tower), and field carrier landing practice (FCLP). In general, the F/A-18E/F FRS and fleet squadrons fly between 7 AM and 7 PM, Monday through Friday; however, approximately 18 percent of total operations are FCLP patterns which simulate aircraft carrier deck landing conditions and are conducted between 7 PM and 7 AM.

In addition to required operational training at the airfield, the installation must provide access to air and ground ranges for air-to-air and air-to-ground training. These ranges are not necessarily located at the airfield but can be nearby or affiliated with other naval installations. No new training ranges are planned for this proposed action. The West Coast training ranges now in use are over land and off the California coast. Ranges designated "restricted" or "military operating area" (MOA) are over land and designated "warning areas" are over water. The ranges are either scheduled via a designated military or civilian controlling agency (for restricted or warning areas) or are used as common airspace with agreements between the military and the Federal Aviation Administration (FAA) (for MOAs). See Section 3.1 for more detailed area descriptions.

Personnel— Military and civilian personnel would work at the receiving facility to support the new squadrons. These personnel would be in addition to those supporting existing continental United States (CONUS) based Pacific Fleet F/A-18 squadrons. Family members would accompany the military personnel located at the receiving facility. Personnel would begin arriving in 1999, with relocation complete by 2004 at NAS Lemoore and by 2007 at NAF El Centro.

Most new military personnel would work in aircraft and engine maintenance functions and would unload aircraft involved in combat operations. Civilian personnel, working primarily in administrative functions, would be housed in the local community. All military and civilian personnel would be located at one West Coast facility. The number of military personnel and family members would vary

by facility, reflecting the number of aircraft supported by each alternative receiving installation (Tables 2-2 and 2-6).

2.2 F/A-18E/F Aircraft Siting Criteria

Alternative sites were developed first by identifying sites eligible for consideration that fulfilled the purpose and need of the proposed action, then by determining site screening criteria to identify suitable candidate sites and to eliminate those that were not reasonable because they could not be upgraded to meet requirements. Candidate sites that passed the screening criteria were measured against more specific facility requirements in areas of aircraft operations, training, maintenance, supply, personnel, and housing.

2.2.1 Site Eligibility Criteria

To be considered a candidate site for the basing of the F/A-18E/F aircraft, an installation would be required to meet the eligibility criteria described below. Since these criteria directly support the purpose and need of the proposed action, installations not meeting these criteria were not considered as candidate sites.

1. All fleet F/A-18 based within the Commander-in-Chief, US Pacific Fleet (CINCPACFLT) Area of Responsibility. Normal practice has been to homeport ships and aircraft within the respective fleet Commander-in-Chief's area of responsibility. This concept simplifies logistics, minimizes overhead, and meets Navy goals of minimizing the time personnel spend away from their homes. With only two exceptions, all Navy aircraft have been homeported in this manner. Only the Navy's EA-6 and F-14 communities are based at a single site serving both Pacific and Atlantic fleets. The EA-6 community on the West Coast is only about 15 percent as large as the F/A-18 community. F-14 aircraft on the East Coast are part of a shrinking community that is expected to be removed from the Navy's active inventory as early as 2008. These circumstances allow the small communities to be single-sited because it provides efficiency.

2. Pacific Fleet F/A-18 Based at a Maximum of Two Sites. Basing Pacific Fleet F/A-18 operational assets at more than two locations is unacceptable because of operational constraints and duplication of costs associated with maintaining and operating the aircraft in multiple locations. It would impede force readiness levels and decrease training effectiveness for F/A-18 aircrew and support personnel. Neither the Navy's current authorized personnel levels nor the Navy's inventory of F/A-18 spare parts and equipment could adequately support such a separation. The Navy's preference is to locate the Pacific Fleet F/A-18 at one site.

3. Location of FRS with Fleet Squadrons. It is the Navy's policy and preference to locate the FRS with most of the fleet squadrons it supports. To separate them would detract significantly from the mutual support between FRS and fleet squadrons that has proven to be of great value. For example, the practice of loaning aircraft or parts to provide needed capability would become very costly and difficult if fleet squadrons were separated. There are insufficient maintenance

parts and equipment in the Navy's inventory and not enough personnel to fully support such a separation. Consequently, separating the FRS from the majority of operational squadrons is considered unacceptable.

2.2.2 Site Screening Criteria

Several West Coast sites were considered as candidate sites and were evaluated for their ability to meet the following site screening criteria. Those sites best meeting the criteria were selected for detailed analysis in this EIS. Those sites failing to meet a critical component of the criteria were eliminated from further consideration (see Section 2.4).

Field Elevation

Home base as well as any associated outlying landing field elevations must be less than 1,000 feet (305 meters [m]) above mean sea level (msl) to adequately replicate aircraft flight characteristics experienced at sea level when operating from aircraft carriers. It is particularly important that aircraft performance in the landing pattern be as close as possible to that experienced at the aircraft carrier. Differences in aircraft performance are insignificant below 1,000 feet (305 m) msl.

Training Ranges

The maximum feasible distance to air-to-air and air-to-ground training ranges is 200 nautical miles (NM) (370 km). This distance is based on fuel costs, aircraft parts usage, rate of airframe life expenditure, and length of aircrews' flying days. Ranges must be equipped with systems sufficient to support advanced F/A-18E/F tactics, and they must be of sufficient size to execute those tactics in a reasonably realistic environment.

At Least Two F/A-18 Squadrons Based at Each Installation

F/A-18 squadrons operate from aircraft carriers as part of a carrier airwing, a tactical unit composed of several separate squadrons of different type aircraft. Although they vary slightly, a typical airwing is composed of nine aircraft squadrons or detachments, two or three of which are F/A-18s. Because extensive training is required to achieve the close coordination that is characteristic of single combat units, an airwing's F/A-18 "sister squadrons" must be based at the same location ashore.

Airfield Tempo of Operations

The level of existing flight activity must be managed to permit unrestricted operations of the F/A-18 aircraft based there. Both military and civilian flight activity must be considered at the airfield itself as well as in the airspace nearby. It is especially important that routine operations and FCLP operations not interfere with each other.

24-Hour Aircraft Operations

The ability to conduct 24-hour aircraft operations without restricting normal traffic flow must be available. This is critical because the strike fighters conduct a

significant portion of their training at night, including up to 90 percent of the FCLP operations.

Dual Runways

Home base must have dual runways to permit continuous landings in the event that the primary runway becomes blocked or otherwise unusable. Intersecting runways are acceptable, as long as FCLPs can be conducted concurrently with routine takeoff and landing operations. For this reason it is usually mandatory that dual runways be parallel rather than intersecting.

Field Carrier Landing Practice

The ability to conduct efficient FCLP is essential and may be accomplished in one of two ways. Preference is to conduct FCLP at the home field, concurrently with routine aircraft operations. If home field FCLP is not feasible, it would be acceptable to conduct FCLP at a sufficiently configured outlying airfield within 50 NM (93 km) of the home field to reduce airframe wear, lost training time, and engine use and wear.

2.2.3 Site Facility Requirements

The Navy determines specific airfield capacity and infrastructure requirements from guidelines found in the document, *Facility Planning Criteria for Navy and Marine Corps Shore Installations, NAVFAC P-80.* This publication provides planning guidance for determining the requirements for shore-based facilities needed to support Navy and Marine Corps operations. In addition, these P-80 guidelines are used to evaluate the adequacy of existing facilities, to identify facility deficiencies or excesses, and to validate construction project plans. Thus, P-80 sets general standards for constructing Navy and Marine Corps facility infrastructure.

Facilities necessary to support the F/A-18E/F aircraft relocation include aircraft operational facilities, training facilities, aircraft maintenance facilities, supply facilities, personnel support facilities, bachelor and family housing, and utilities. In accordance with Navy requirements (OPNAVINST 5090.1B), all facility construction would be required to incorporate energy efficiency and water conservation techniques and to comply with the pollution prevention program, comprehensive pesticide compliance program, solid waste management plan, and hazardous waste management program of each installation. A description of the necessary support facilities is provided below.

Aircraft Operational Facilities

Primary Runway Length. The primary runway must be of sufficient length to allow F/A-18E/F aircraft to accelerate to takeoff speed, rotate, then abort the takeoff and stop, at maximum takeoff weight, without the use of arresting gear. This must be achievable on a wet runway and at the highest normally foreseeable density altitude experienced at the specific location. Runway length is specific to the aircraft, adjusted for altitude and temperature. The minimum primary runway length required for the alternatives in this analysis is 9,000 feet (2,743 m).

Secondary Runway Length. Secondary runways must be of sufficient length to allow F/A-18E/F aircraft to land safely at maximum landing weight without the use of arresting gear. This also must be achievable on a wet runway at the highest likely density altitude. The minimum length acceptable for secondary runways is 6,500 feet (1,981 m).

Combat Aircraft Loading Area (CALA). Facilities are required for storing and handling live weapons used by F/A-18E/F aircraft and for loading and arming the aircraft.

Separate Hangar Modules. Individual hangars may be composed of several modules configured for particular aircraft squadron functions. Each fleet squadron requires a separate hangar module in which to house its maintenance, training, and administrative functions.

Training Facilities

Strike Fighter Weapons School. The school provides training to aircrews on mission planning, tactics, and air-launched weapons release, handling, and loading. This facility includes classrooms, administrative offices, storage areas, a library, an auditorium, and a ramp for aircraft weapons loading training, which has space for fully operational F/A-18E/F aircraft, with wings spread and carrying their allotted weapons. The school must be collocated with the FRS and most fleet replacement squadrons.

Aircraft Simulators. The complexity of the F/A-18E/F system makes it vital that sophisticated aircraft and weapons system simulators be available for use by both FRS and fleet squadron pilots.

Naval Air Maintenance Training (NAMTRA) Detachment. This activity is used to train personnel in aircraft maintenance. It contains offices for maintenance trainers, hangar space for one aircraft with support equipment, and associated classrooms. Classroom and laboratory space is required for organizational and intermediate level engine maintenance training and servo cylinder testing. NAMTRA must be collocated with the FRS and most fleet squadrons.

Aircraft Maintenance Facilities

Organizational Maintenance. Naval aircraft maintenance is divided into three levels. Organizational level maintenance is the most basic, consisting of day-to-day upkeep and repair performed by the technicians assigned to the squadrons. It includes routine inspections and servicing, as well as removal and replacement of various aircraft components. Appropriate organizational maintenance facilities would be required at the selected site.

Intermediate Level Maintenance. More complex aircraft repairs are conducted at aircraft intermediate maintenance departments (AIMD) by more specialized technicians who repair the inoperative components that the organizational

maintenance level has removed from aircraft. Complete AIMD capabilities for F/A-18E/F aircraft would be required at the selected site.

Depot Level Maintenance would not be required at the selected site. This most complex maintenance includes major overhaul, aircraft upgrades, and repair of major airframe damage. Depot maintenance would continue to be performed at current remote locations regardless of the alternative selected in this analysis.

Supply Facilities

Supply facilities needed for the proposed action include warehouse and storage areas. Specific requirements include a general warehouse for covered bulk and bin storage, a hazardous-flammable storehouse, receiving space, packing and crating space, secure storage, and administrative space, a general storage shed for gas cylinders and vehicle construction material, and a paved, uncovered open storage area for general supply facilities.

Personnel Support Facilities

Personnel support facilities provide services and goods for personnel and family members affiliated with the proposed action. Several types of facilities are necessary to provide these services, including the following:

- Administrative offices;
- Medical facilities;
- Dining facilities for enlisted personnel and officers;
- Clubs for enlisted personnel and officers;
- Exchange;
- Commissary;
- Credit union;
- Hobby shops (crafts and automotive);
- Equipment rental center;
- Bowling center;
- Fitness center;
- Indoor playing courts;
- Outdoor recreational facilities;
- Youth center;
- Child development center;
- Religious ministry facility; and
- Counseling center

Housing

Housing must be available for military personnel associated with the proposed action. Types of military housing include bachelor enlisted quarters (BEQs), bachelor officer quarters (BOQs), and family housing. The total number of housing facilities to support the proposed action at the alternative basing installations are indicated in Tables 2-1 and 2-5. Civilian employees would be hired from nearby communities and therefore are not included in housing projections. Some military personnel also may choose to live off-base in nonmilitary community housing.

Utilities

Utilities may be expanded or upgraded to meet additional demands generated by aircraft maintenance, operations, and new personnel support facilities. The Navy requires that project scopes include all work to produce a complete and usable facility (OPNAVINST 11010.20), which includes providing utilities and services. Utilities affected by the proposed action include water, wastewater, natural gas and electricity, and stormwater. In accordance with Navy policy, utilities at the receiving facility would be designed to accommodate demands generated by aircraft and personnel associated with the proposed action.

2.3 DESCRIPTION OF ALTERNATIVES

As a result of the site screening process, two installations were identified for detailed consideration in this EIS: NAS Lemoore and NAF El Centro, California. NAS Lemoore is the preferred alternative evaluated in this EIS.

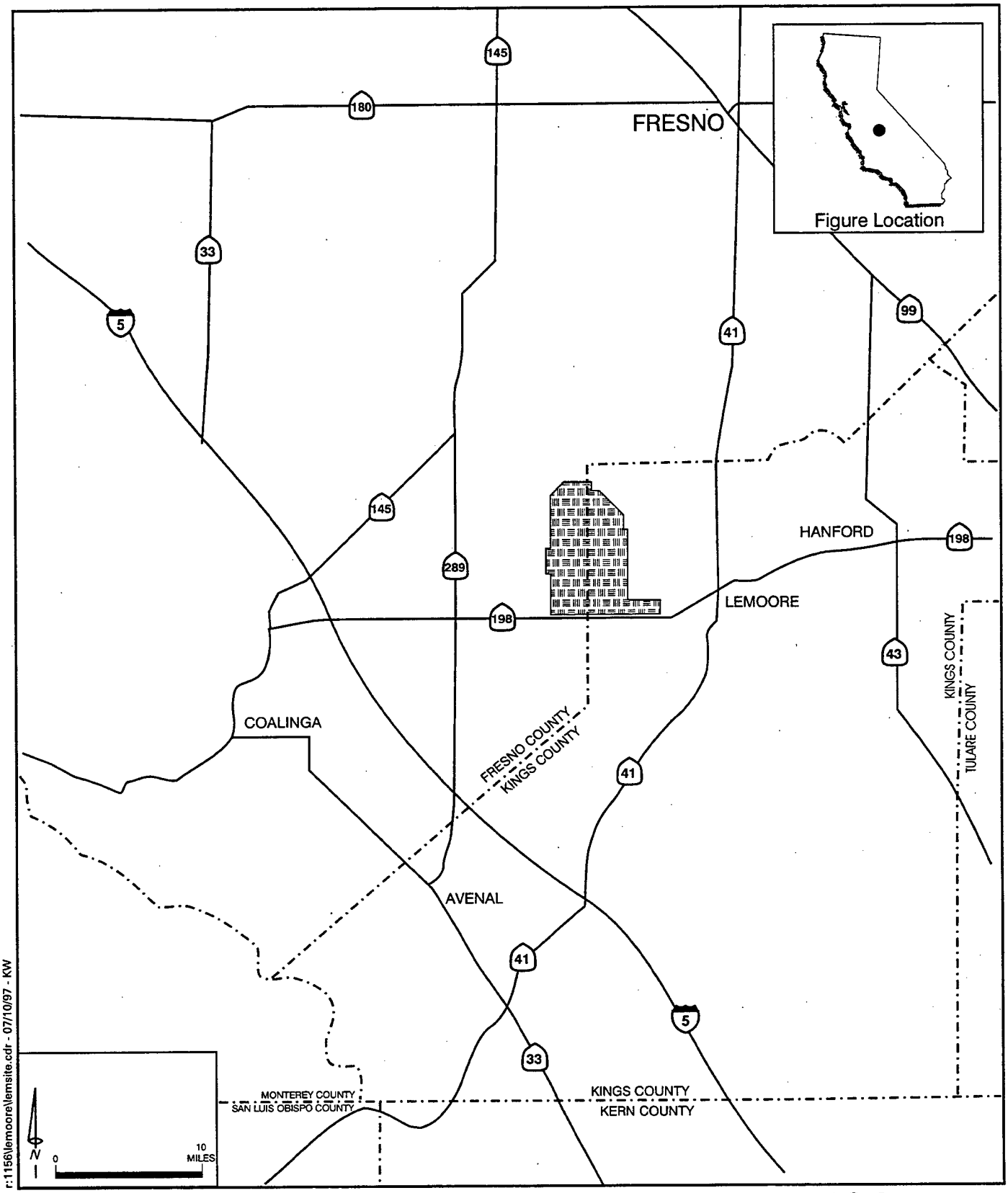
NAWS Point Mugu was initially considered a potential candidate site; however, subsequent comparison with site selection criteria clearly showed that the installation could not accommodate F/A-18E/F facility and operational requirements. NAWS Point Mugu therefore was eliminated from consideration in this EIS. Alternatives considered and rejected are described in Section 2.4 of this chapter.

2.3.1 Preferred Alternative: NAS Lemoore

NAS Lemoore contains 18,784 acres (7,601 hectares [ha]) of Navy-owned land and 11,032 acres (4,467 ha) of aviation easements in the Central San Joaquin Valley, California (Figure 2-1). The 29,816-acre (12,069 ha) base is approximately 80 miles (128 kilometers [km]) inland from the Pacific Ocean and halfway between Los Angeles and Sacramento. The cities of Lemoore and Hanford are approximately 7 miles (11 km) and 17 miles (27 km) east of the base, respectively. The closest large urban center is Fresno, approximately 35 miles (56 km) to the northeast.

Existing Base Operations

The official mission of NAS Lemoore is to maintain and operate facilities and to provide services and material to support operations of aviation activities and units of the operating forces of the Navy and other activities or units, as designated by



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NAS Lemoore is located in Fresno and Kings County near the city of Fresno.

LEGEND:

- NAS Lemoore
- Road
- County Boundary

NAS Lemoore Regional Location Map

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: Tetra Tech 1997.

Figure 2-1

the Chief of Naval Operations (CNO). NAS Lemoore is home base for all Pacific Fleet F/A-18 aircraft, except those forward deployed units permanently based in Japan. NAS Lemoore home-based aircraft include the F/A-18C/D FRS and 10 fleet squadrons, totaling 162 aircraft. The installation maintains a workforce of 6,209 people, composed of 4,518 military personnel and 1,691 civilian personnel.

NAS Lemoore airfield contains two parallel runways—14L/32R and 14R/32L. Both runways are about 13,500 feet (4,115 m) long and are at an elevation of 235 feet (72 m) msl. Annual flight activity at NAS Lemoore averages 18,773 takeoffs and landings, 29,402 touch-and-go patterns, 50,898 FCLP patterns, and 6,908 GCA box patterns (US Navy 1997c). The F/A-18C/D aircraft constitute over 80 percent of the flight activity at the airfield. Training exercises originating from NAS Lemoore are conducted in ranges in California and Nevada and in the air/sea warning areas immediately off the coast of California.

Additional Requirements for Facilities

Locating the F/A-18E/F squadrons at NAS Lemoore would result in an additional 92 aircraft, which would require additional operational, personnel support, and housing facilities. Construction or expansion and modification projects required for the proposed action are indicated in Table 2-1, followed by a description of the additional facility requirements by general category. The proposed locations for aircraft facilities, housing, and personnel support facilities at NAS Lemoore are shown on figures 2-2 and 2-3.

Aircraft Facilities. Existing aircraft facilities at NAS Lemoore would be renovated or adapted to accommodate the proposed action. The only new aircraft facility required would be an aviation armament shop. Aircraft facilities needing expansion or modification include the NAMTRA, Hangar 5 (to house the FRS), the Strike Fighter Weapons School, the airframe shop, the engine maintenance shop, and Hangar 4 (to house the fleet squadrons).

Personnel Support and Housing Facilities. Relocating the F/A-18E/F military personnel and family members would require expanding existing BEQs to house an additional 358 junior enlisted personnel (E-1 through E-6). Current capacity will accommodate the additional 245 junior enlisted personnel. An additional 399 units of family housing would be needed to accommodate the proposed action. The youth center and child development center also would have to be expanded. A counseling and assistance center would have to be constructed to support the additional personnel. The numbers of personnel that would be relocated to NAS Lemoore and their family members are shown in Table 2-2.

Additional Requirements for Aircraft Operations

Locating the proposed action at NAS Lemoore would place F/A-18E/F squadrons close to all West Coast military training airspace. The 92 F/A-18E/F aircraft at NAS Lemoore would produce additional operations, as shown in Table 2-3.

Table 2-1
F/A-18E/F Construction/Expansion Projects at NAS Lemoore

	F/A-18E/F Requirement	Project Size[1]	Project Type
1.	Maintenance Hangar (FRS)	78,420 SF	Modification
2.	NAMTRA	24,006 SF	Expansion
3.	Strike Fighter Weapons School	6,943 SF	Expansion
4.	Maintenance Hangar (Fleet Squadrons)	116,423 SF	Modification
5.	Airframe Shop	24,006 SF	Modification
6.	Engine Maintenance Shop	12,003 SF	Expansion
7.	Aviation Armament Shop	45,008 SF	Construction
8.	Youth Center	8,451 SF	Expansion
9.	Child Development Center	15,900 SF	Expansion
10.	Counseling Assistance Center	17,244 SF	Construction
11.	BEQ (E1 to E6) for 358 personnel	127,177 SF	Expansion
12.	Family Housing	399 units	Expansion

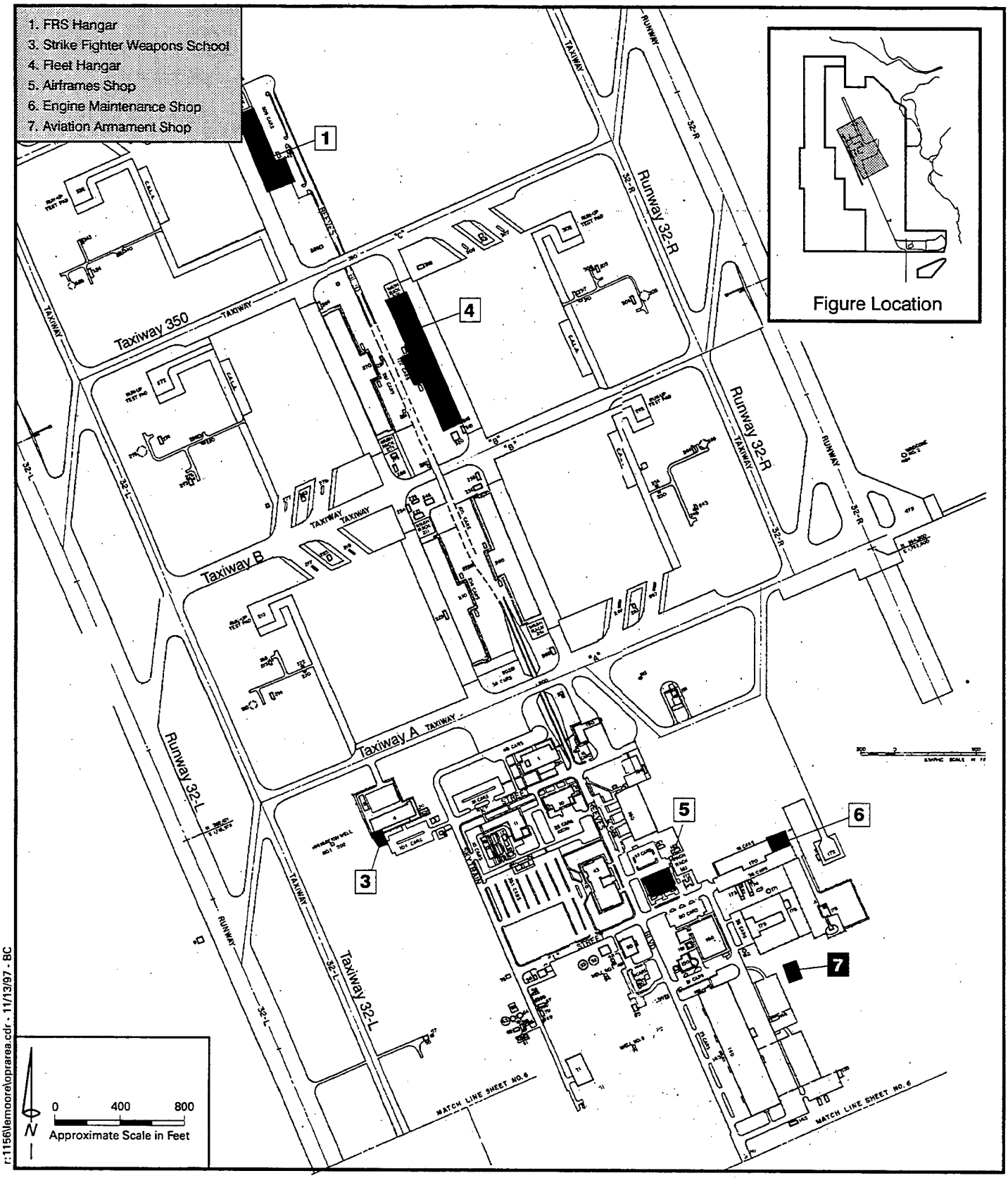
[1]In square feet (SF)
Source: US Navy 1997a.

F/A-18E/F aircraft located at NAS Lemoore would travel to local training ranges to perform air-to-air and air-to-ground training (Table 2-4). Range scheduling coordination among all West Coast military aviation bases and squadrons is extensive and ongoing. NAS Lemoore is closer to the R-2508 Airspace Complex (over the Sierra Nevada mountain range) and Warning Areas 283 and 285, beginning approximately 35 miles off the central California coast.

The estimated impact of introducing the F/A-E/F aircraft on these ranges is given in "sortie" numbers rather than "operations." A sortie is a single aircraft flight in an area and is a better tool for estimating an impact on an aircraft range, whereas "operations" is better for estimating the impact at an air station and locality. A sortie may contain multiple operations. The potential impacts from the increase in sorties at these ranges will be prevented by enhancing coordination among the affected military operations agencies, by using underutilized range areas, and by implementing schedule priorities that would prevent over-scheduling and consequent overuse of ranges.

2.3.2 NAF El Centro Alternative

NAF El Centro occupies approximately 2,640 acres (1,690 ha) in Imperial County, California, approximately 7 miles (11 km) west of the city of El Centro (the county seat) (Figure 2-4). The base is approximately 100 miles (193 km) east of the Pacific Ocean and 65 miles (105 km) west of Yuma, Arizona. The US international border is 12 miles (19 km) to the south. A portion of the base is under an agricultural outlease program, which allows for growing commercial crops. This commercial enterprise has the added benefit of controlling dust and weeds on the base.



NAS Lemoore has most aircraft facilities necessary for the F/A-18E/F aircraft. The aviation armament shop would be the only new facility construction.

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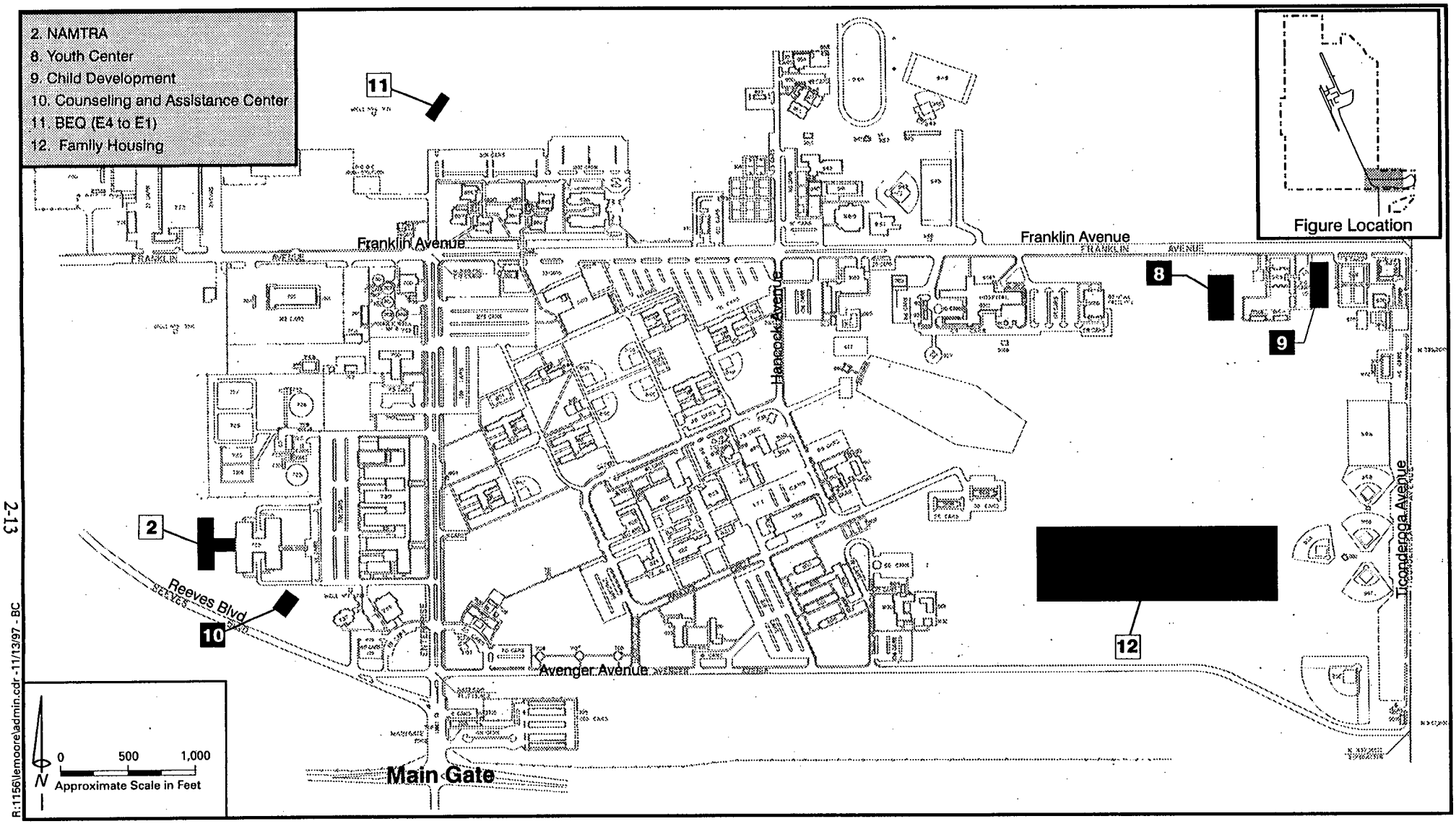
- 1 Construct New Facility
- 1 Expand/Modify Existing Facility

NAS Lemoore Aircraft Facilities Projects: Operations Area

Facility Development For West Coast Basing of the F/A-18E/F Aircraft

Source: US Navy 1997m

Figure 2-2



2-13

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Personnel support facilities would be built as new construction while existing housing would be expanded at NAS Lemoore. The NAMTRA, an aircraft facility, would be new construction.

Legend:

- 1 Construct New Facility
- 1 Expand/Modify Existing Facility

NAS Lemoore Personnel Housing and Support Projects: Administration Area

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: US Navy 1997m

Figure 2-3

Table 2-2
F/A-18E/F Military Personnel and Family Members at NAS Lemoore

	Officer	E7-E9	E1-E6	Total
Personnel				
Single on-base (BEQ or BOQ)	95	60	603	758
Married on-base (family housing)	0	0	399	399
Married off-base	221	79	399	699
Total	*316*	*139*	*1,401*	*1,856*
Family Members				
Children Grades K-8	166	84	841	1,091
Children Grades 9-12	29	15	148	192
Spouses and other dependents	322	130	1,309	1,761
Total	*517*	*229*	*2,298*	*3,044*
Total Personnel and Family				*4,900*

Source: US Navy 1997b.

Table 2-3
Projected F/A-18E/F Aircraft Operations Activity at NAS Lemoore

Aircraft	Operation	Day 7 AM – 7 PM	Evening 7 PM –10 PM	Night 10 PM – 7 AM	Total
F/A-18E/F Fleet	Takeoff	3,232	375	10	3,617
	Straight-in/Full Stop Landing	495	63	27	585
	Overhead Landing	2,540	326	166	3,032
	Visual Touch-&-Go Pattern	1,854	224	104	2,182
	FCLP Pattern	5,265	3,135	1,944	10,344
	GCA Box Pattern	232	76	14	322
	ACLS	28	91	81	200
	Total	*13,646*	*4,290*	*2,346*	*20,282*
F/A-18E/F FRS	Takeoff	6,438	903	52	7,393
	Straight-in/Full Stop Landing	1,101	271	143	1,515
	Overhead Landing	4,904	496	478	5,878
	Visual Touch-&-Go Pattern	21,854	3,181	2,521	27,556
	FCLP Pattern	10,588	6,986	3,504	21,078
	GCA Box Pattern	1,394	998	332	2,724
	ACLS	146	602	236	984
	Total	*46,425*	*13,437*	*7,266*	*67,128*
	FRS AND FLEET TOTAL				*87,410*
	CURRENT OPERATIONS AT NAS LEMOORE				*105,981*

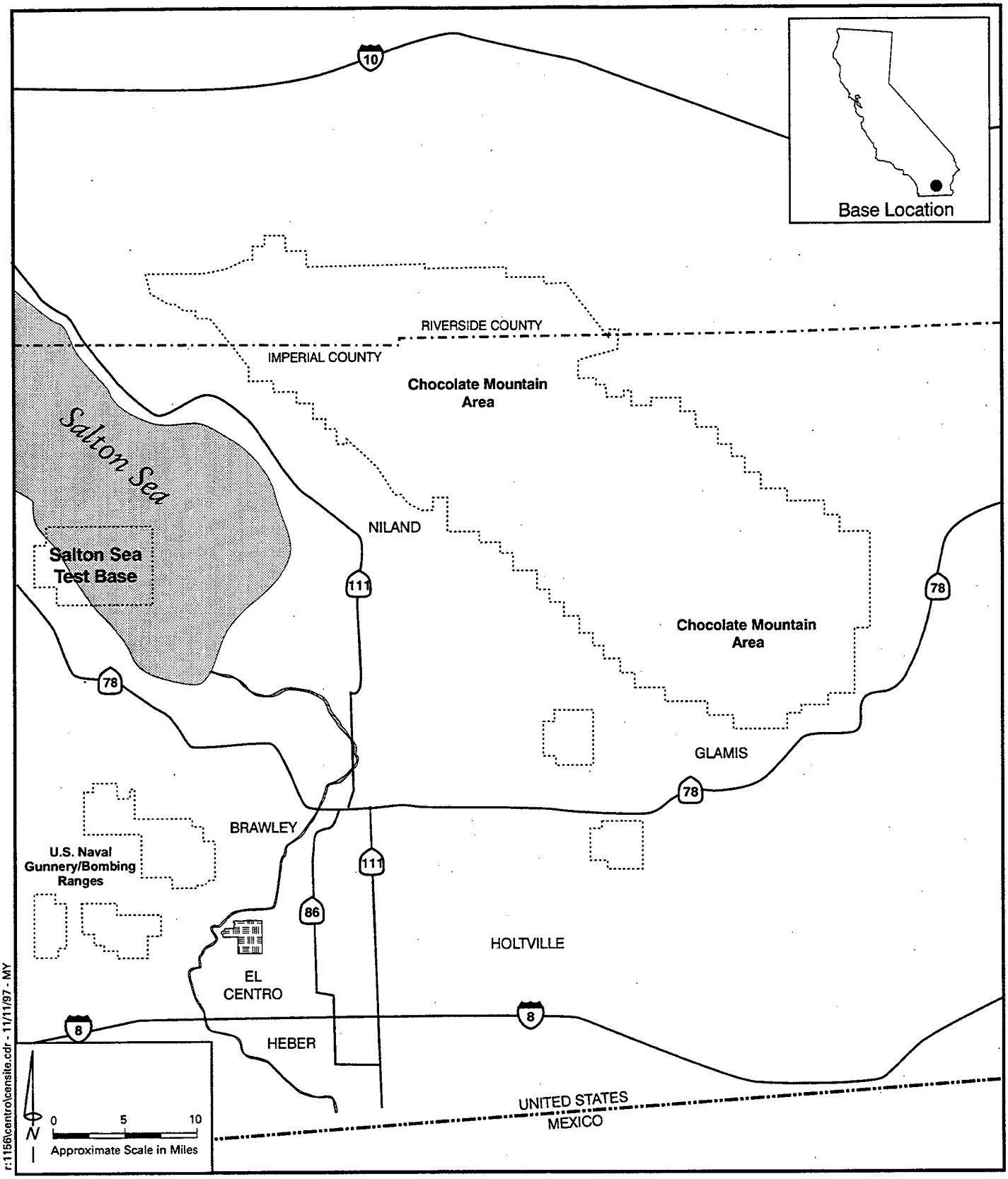
Source: US Navy 1997c.

Table 2-4
Estimated F/A-18E/F West Coast Area Training Range Sorties at NAS Lemoore

Training Area	F/A-18E/F FRS[1]	F/A-18E/F Fleet	Total Sorties
El Centro	2,090	120	2,210
Fallon Complex	1,254	1,310	2,564
R-2508 Complex	5,754	1,708	7,462
Warning Areas	0	184	184
Total	*9,098*	*3,322*	*12,420*

[1]Includes detachment sorties at El Centro and Fallon complexes.

Source: US Navy 1997d.



NAF El Centro is located in Imperial County near the California/Mexico Border.

LEGEND:

- NAF El Centro
- Road
- County Boundary

NAF El Centro Regional Location Map

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Figure 2-4

Source: Tetra Tech 1997.

Existing Base Operations

The primary mission of NAF El Centro is to support fleet air squadrons performing tactical air training and to provide additional support to other Department of Defense (DOD) components.

The NAF El Centro airfield, at an elevation of 45 feet (14 m) below msl, has two runways that support nearby target ranges. The 9,500-foot (2,896 m) primary runway (08/26) is intersected by the 6,800-foot (2,073 m) secondary runway. Flight patterns to the west and north, toward the target ranges, are the most heavily used. FCLP patterns are primarily conducted on runway 08/26.

Aircraft operating at NAF El Centro train during the day and at night in various air-to-air and air-to-ground training regimes, in addition to FCLPs. NAF El Centro also receives diverted air traffic from coastal installations under adverse weather conditions, such as fog.

The base supports approximately 17,150 takeoffs and landings, 25,575 touch-and-go exercises, and 78,840 FCLP patterns each year. The F-18 is the predominant aircraft using NAF El Centro, although the base also supports squadrons of A-4s, F-14s, S-3s, T-45s, T-34s, and AV-8s. These fixed-wing aircraft constitute approximately 89 percent of flight activity at NAF El Centro. Several transient units use facilities and services at NAF El Centro throughout the year, including members of the Navy's flight demonstration squadron, the Blue Angels, who conduct three months of intensive training at NAF El Centro each winter. Additionally, the S-3 aircraft based at NAS North Island use NAF El Centro to conduct FCLP and other training. The base is staffed with a permanent workforce of approximately 863 people, composed of 343 military personnel and 520 civilian employees.

Additional Requirements for Facilities

Only a few of the necessary facilities are available at NAF El Centro to support the additional 164 aircraft resulting from the proposed action; therefore, a large amount of construction would be required to accommodate the aircraft and personnel support facility requirements. Construction or extensive renovation required for the proposed action is indicated in Table 2-5 below. The numbers of personnel that would be relocated to NAF El Centro are indicated in Table 2-6. The proposed locations for aircraft facilities, personnel support facilities, and housing at NAF El Centro are shown on figures 2-5 through 2-7. Additional flight operations for the 164 F/A-18E/F aircraft are shown in tables 2-7 and 2-8.

Aircraft Facilities. The proposed action at NAF El Centro would require constructing a parallel runway at least 9,000 feet (2,743 m) long, along with associated taxiways, so that FCLP and routine operations could be conducted concurrently. Both runways would have to be 9,000 feet (2,743 m) long to accommodate takeoffs and landings. Because FCLP requires a left circling traffic

Table 2-5
F/A-18E/F Construction/Expansion Projects at NAF El Centro

	F/A-18E/F Requirement	Project Size[1]	Project Type
1.	Parallel Runway 2	9,000 LF	Construction
2.	Taxiways	750 LF	Construction
3.	Maintenance Hangar (FRS)	78,420 SF	Construction
4.	NAMTRA	37,800 SF	Construction
5.	Strike Fighter Weapons School	25,235 SF	Construction
6.	Flight Simulator Facility	125,367 SF	Construction
7.	Maintenance Hangar (Fleet Squadrons)	116,429 SF	Construction
8.	External Fuel Tank Storage	1,200 SF	Construction
9.	Airframe Shop	25,930 SF	Construction
10.	Engine Maintenance Shop	62,876 SF	Construction
11.	Engine Test Cell	14,130 SF	Construction
12.	Avionics Shop	62,233 SF	Construction
13.	Aviation Armament Shop	8,400 SF	Construction
14.	Aviation Life Support System Shop	9,020 SF	Construction
15.	Battery Shop	2,825 SF	Construction
16.	Aircraft Ground Support Equipment Shop	16,850 SF	Construction
17.	Ground Support Equipment Holding Shed	20,902 SF	Construction
18.	General Warehouse Navy	651,847 SF	Construction
19.	General Storage Shed	17,500 SF	Construction
20.	Open Storage Area	94,415 SY	Expansion
21.	Administrative Offices	102,741 SF	Construction
22.	Dining Facility for Enlisted Personnel	22,543 SF	Expansion
23.	Enlisted Personnel Club	57,002 SF	Expansion
24.	Exchange	10,230 SF	Construction
25.	Commissary	80,000 SF	Construction
26.	Credit Union	8,200 SF	Expansion
27.	Hobby Shop – Crafts	14,520 SF	Expansion
28.	Hobby Shop – Automotive	9,937 SF	Expansion
29.	Equipment Rental Center	6,570 SF	Expansion
30.	Bowling Center	21,711 SF	Expansion
31.	Fitness Center	5,001 SF	Expansion
32.	Indoor Playing Courts	2,548 SF	Expansion
33.	Youth Center	17,287 SF	Construction
34.	Child Development Center	32,778 SF	Construction
35.	Religious Ministry Facility	34,892 SF	Expansion
36.	BOQ for 134 personnel	80,609 SF	Expansion
37.	BEQ (E7 to E9) for 118 personnel	37,241 SF	Expansion
38.	BEQ (E1 to E6) for 1,170 personnel	398,962 SF	Expansion
39.	Family Housing	775 Units	Expansion

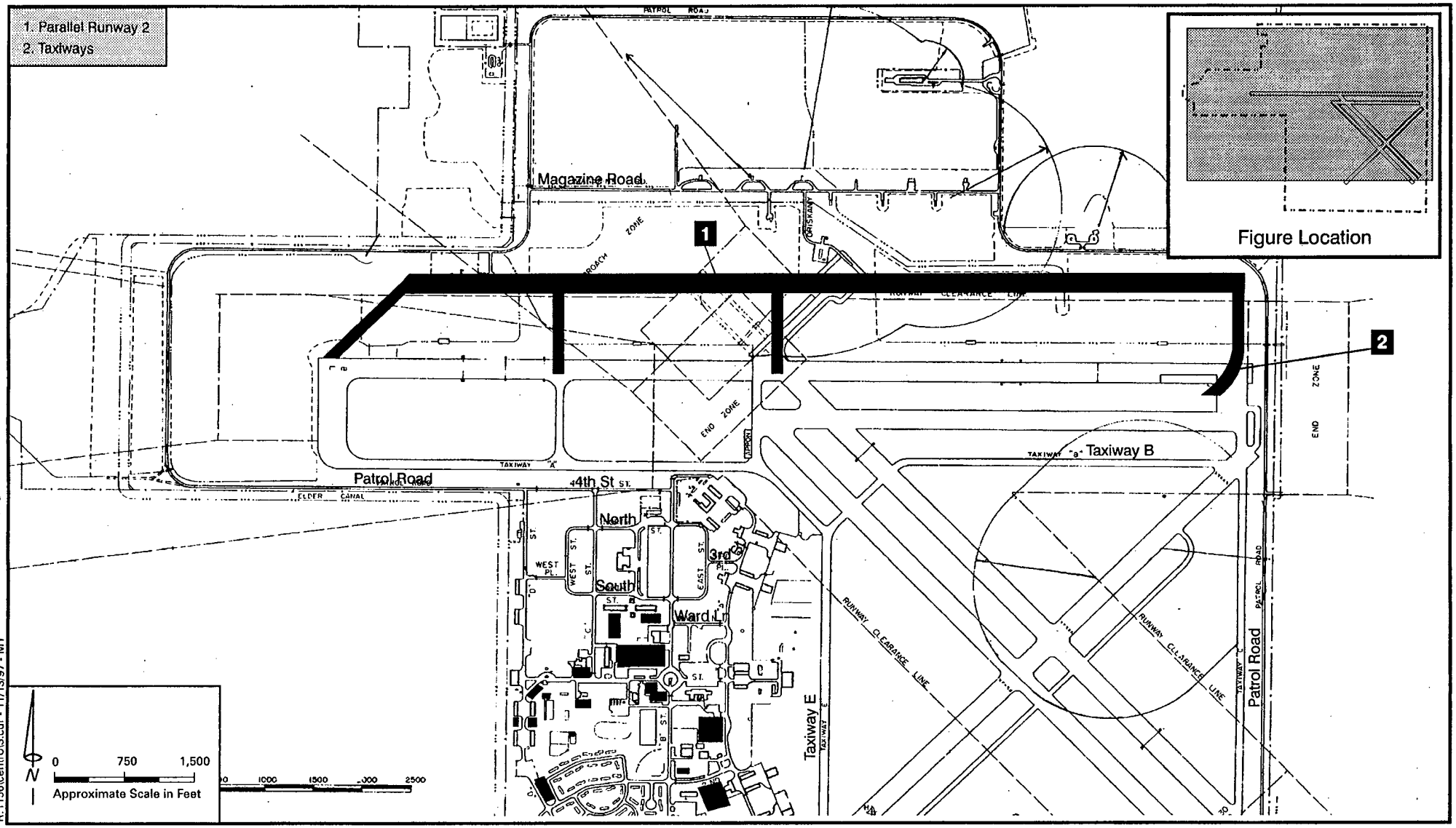
[1]In linear feet (LF), square feet (SF), and square yards (SY).

Source: US Navy 1997a.

Table 2-6
F/A-18E/F Military Personnel and Family Members at NAF El Centro

	Officer	E7-E9	E1-E6	Total
Personnel				
Single on-base (BEQ or BOQ)	134	118	1,170	1,422
Married on-base (family housing)	0	0	775	775
Married off-base	313	157	775	1,245
Total	*447*	*275*	*2,720*	*3,442*
Family Members				
Children Grades K-8	236	165	1,633	2,034
Children Grades 9-12	42	29	288	359
Spouses and other dependents	456	257	2,540	3,253
Total	*734*	*451*	*4,461*	*5,646*
Total Personnel and Family				*9,088*

Source: US Navy 1997d.



2-18

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Implementation of the proposed action at NAF El Centro would require construction of a new runway and taxiways.

LEGEND:

1 Construct New Facility

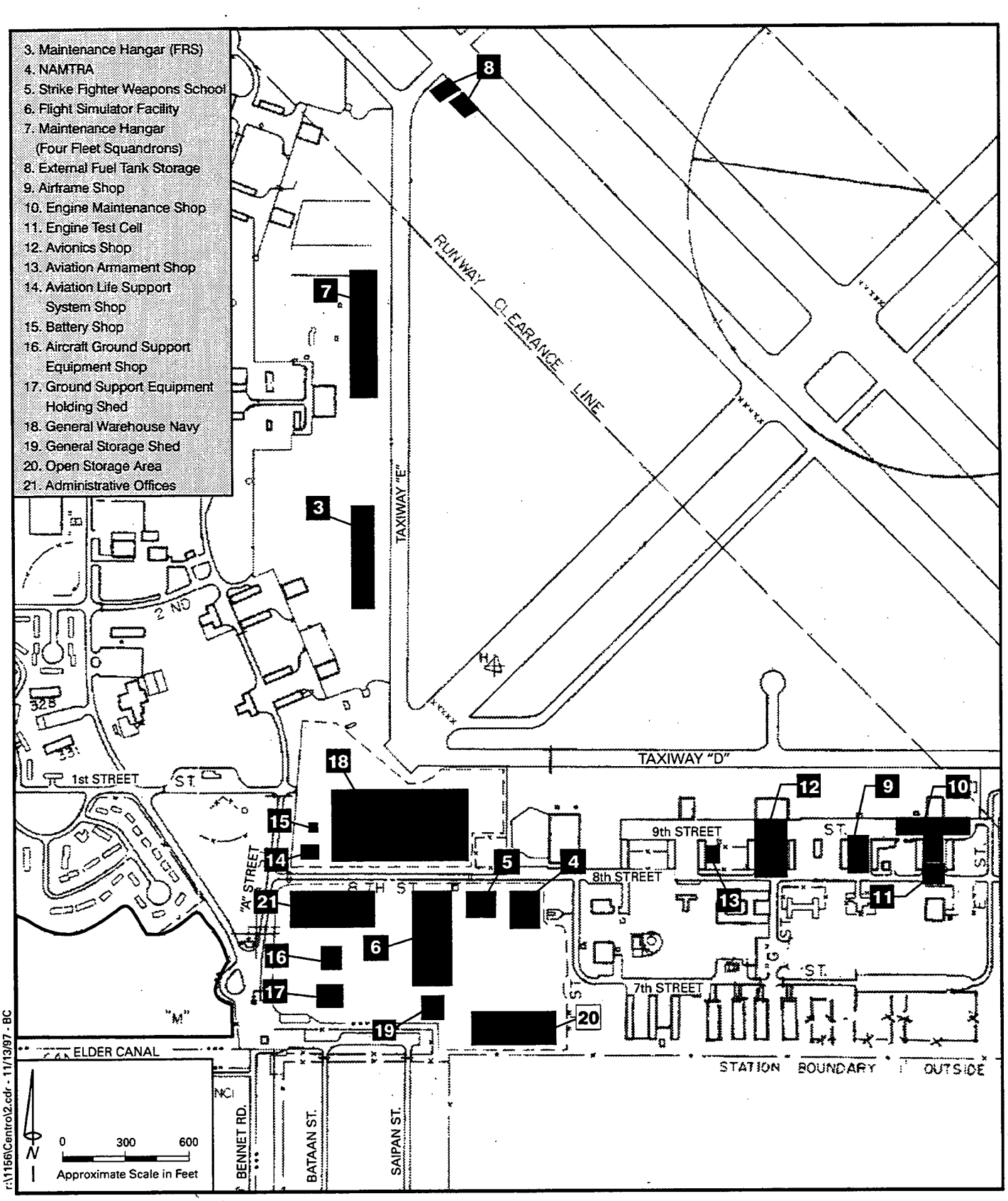
1 Expand/Modify Existing Facility

NAF El Centro Aircraft Facilities Projects: Runway Area

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: US Navy 1997n

Figure 2-5



Implementation of the proposed action at NAF El Centro would require construction of all necessary F/A-18E/F aircraft facilities.

Legend:

1 Construct New Facility

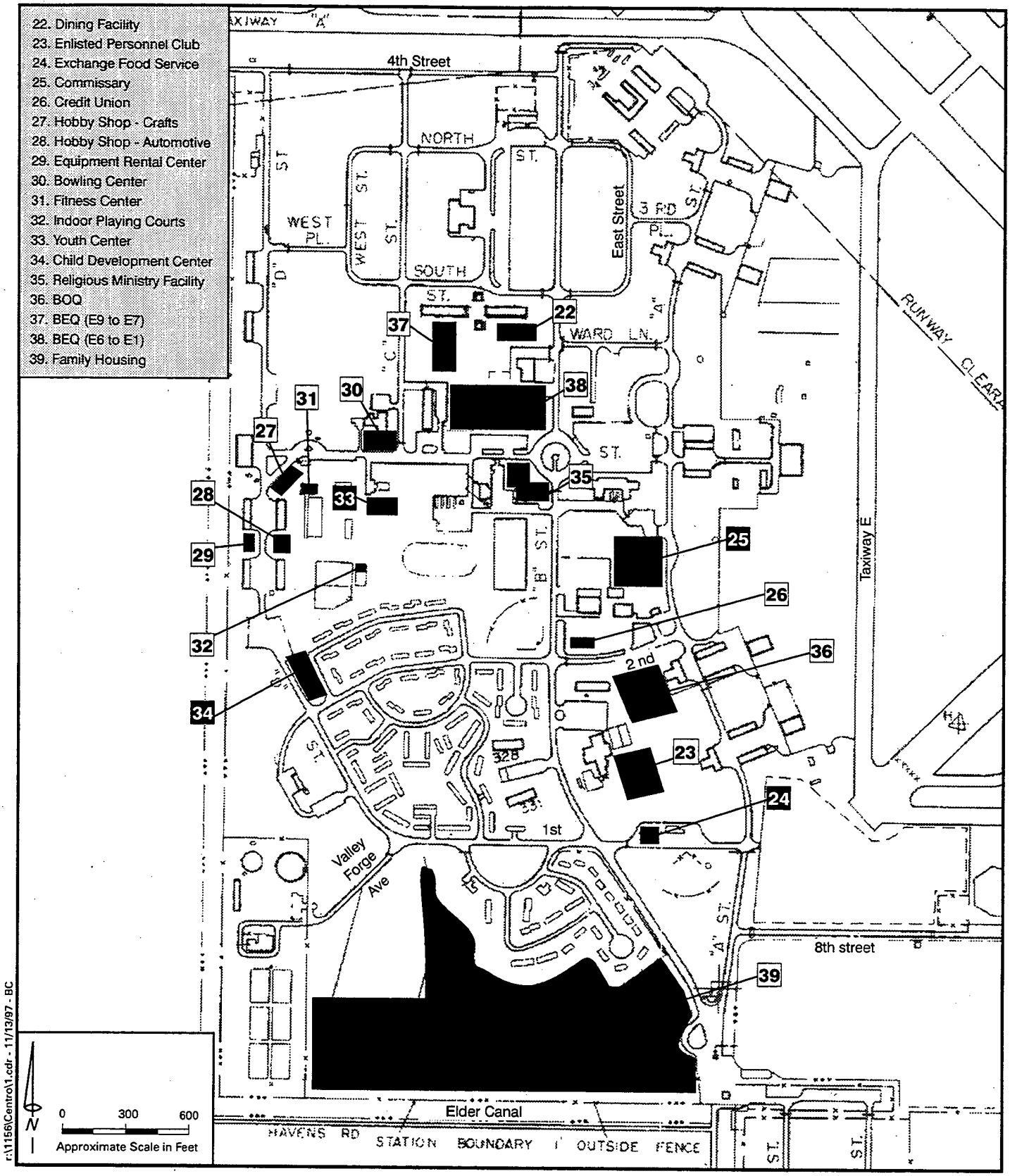
[1] Expand/Modify Existing Facility

NAF El Centro Aircraft Facilities Projects: Operations Area

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Figure 2-6

Source: US Navy 1997n



Implementation of the proposed action at NAF El Centro would require expansion of most housing and personnel support functions.

Legend:

1 Construct New Facility

1 Expand/Modify Existing Facility

NAF El Centro Personnel Support Projects: Administration/Housing Area

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: US Navy 1997n

Figure 2-7

Table 2-7
Projected F/A-18E/F Aircraft Operations Activity at NAF El Centro

Aircraft	Operation	Day 7 AM – 7 PM	Evening 7 PM –10 PM	Night 10 PM – 7 AM	Total
F/A-18E/F Fleet	Takeoff	7,387	857	23	8,267
	Straight-in/Full Stop Landing	1,131	144	62	1,337
	Overhead Landing	5,806	745	379	6,930
	Visual Touch-and-Go Pattern	4,238	512	238	4,988
	FCLP Pattern	12,034	7,166	4,443	23,643
	GCA Box Pattern	530	174	32	736
	ACLS	64	208	185	457
	Total	*31,190*	*9,806*	*5,362*	*46,358*
F/A-18E/F FRS	Takeoff	6,438	903	52	7,393
	Straight-in/Full Stop Landing	1,101	271	143	1,515
	Overhead Landing	4,904	496	478	5,878
	Visual Touch-and-Go Pattern	21,854	3,181	2,521	27,556
	FCLP Pattern	10,588	6,986	3,504	21,078
	GCA Box Pattern	1,394	998	332	2,724
	ACLS	146	602	236	984
	Total	*46,425*	*13,437*	*7,266*	*67,128*
	FRS AND FLEET TOTAL				*113,486*
	CURRENT OPERATIONS AT NAF EL CENTRO				*121,565*

Source: US Navy 1997c.

Table 2-8
Estimated F/A-18E/F West Coast Area Training Range Sorties at NAF El Centro

Training Area	F/A-18E/F FRS[1]	F/A-18E/F Fleet	Total Sorties
El Centro	1,904	550	2,454
Fallon Complex	1,440	760	2,200
R-2508 Complex	3,927	870	4,797
W291	787	625	1,412
R-2301 (Barry M. Goldwater)	660	340	1,000
Other MOAs*	380	177	557
Total	*9,098*	*3,322*	*12,420*

* Other available training areas not currently used by NAS Lemoore-based squadrons.

Includes detachment sorties at Fallon complex.

Source: US Navy 1997d.

pattern, these parallel runways would prevent the FCLP pattern from crossing the flight path of the other runway, which would be in use for routine flight operations. Other facilities that would have to be constructed include hangars for the FRS and all fleet squadrons, a NAMTRA, a flight simulator facility, a strike fighter weapons school, a general warehouse, a general storage shed, an open storage area, an airframe shop, an engine maintenance shop, an engine test cell, an avionics shop, an aviation armament shop, an aviation life support system shop, a battery shop, an aircraft ground support equipment shop, a ground support equipment holding shed, and a general storage shed.

Personnel Support and Housing Facilities. Relocating the F/A-18E/F military personnel and their family members to NAF El Centro would require expanding

the BEQs to house 1,288 enlisted personnel and the BOQ to house 134 officers. An additional 775 family housing units also would be needed to accommodate the proposed action. Personnel support facilities requiring construction include administrative offices, an enlisted personnel dining facility, an enlisted personnel club, an exchange, a commissary, a credit union, crafts and automotive hobby shops, an equipment rental center, a bowling center, a fitness center, indoor playing courts, outdoor recreational facilities, a youth center, a child development center, and a religious ministry facility. The numbers of personnel that would be relocated to NAF El Centro and their family members are shown in Table 2-6.

Additional Requirements for Aircraft Operations

Locating the proposed action at NAF El Centro would require constructing a parallel runway to enable FCLP operations. The installation operates at 95 percent of capacity nine months of the year. The 164 additional F/A-18E/F aircraft at NAF El Centro would perform the airfield operations described in Table 2-7.

F/A-18E/F aircraft located at NAF El Centro would travel to local training ranges to perform air-to-air and air-to-ground training (Table 2-8). Range scheduling coordination among all West Coast military aviation bases and squadrons is extensive and ongoing. Both NAS Fallon and NAF El Centro have several nearby restricted areas (described as complexes in Table 2-8).

The estimated impact of introducing the F/A-18E/F aircraft on these ranges is given in sortie numbers rather than operations. A sortie is a single aircraft flight in an area and is a better tool for estimating an impact on an aircraft range. A sortie may contain multiple operations. The potential impacts from the increase in sorties at these ranges will be prevented by enhancing coordination among the affected military operations agencies, by using underutilized range areas, and by implementing schedule priorities that would prevent over-scheduling and consequent overuse of ranges.

2.3.3 No Action Alternative

Under the No Action Alternative, no new or expanded facilities would be constructed at any potential receiving site, and there would be no increase in functional capacity at any site. The No Action Alternative serves as a benchmark for describing and quantifying the incremental impacts of the detailed alternatives. The baseline established for evaluating the impacts of developing facilities to support West Coast basing of the F/A-18E/F aircraft are the current conditions at the receiving sites. This allows the proposed development for each alternative to be compared to a "no action" benchmark.

2.4 Alternatives Considered but Eliminated

Several installations were considered as potential basing sites for the F/A-18E/F squadrons. However, following a detailed analysis of the operational and facility requirements for accomplishing the proposed action at these installations, those sites were eliminated from further consideration. NAWS Point Mugu initially was

considered a potential candidate site; however, subsequent comparison with site selection criteria clearly showed that the installation could not accommodate F/A-18E/F facility and operational requirements.

Table 2-9 shows the capabilities of the installations to meet the F/A-18E/F squadron's operational criteria. As indicated by the table, each site failed to meet at least one critical operational criteria. The specific reasons for eliminating these sites from further consideration are provided below.

Table 2-9
F/A-18E/F Operational Criteria

Installation	Field Elevation	Training Ranges	Capacity 2 Squadrons	Tempo Operations	24-Hour Operations	Dual Runway	FCLP
NAS Whidbey Island	✓	-.-	✓	✓	✓	-.-	✓
NAS Fallon	-.-	✓	-.-	-.-	✓	✓	✓
NAWS China Lake	-.-	✓	✓	-.-	✓	✓	-.-
NAWS Point Mugu	✓	✓	✓	-.-	✓	-.-	-.-
NAS North Island	✓	✓	-.-	-.-	✓	-.-	-.-
MCAS Miramar	✓	✓	-.-	-.-	✓	✓	✓
MCAS Yuma	✓	✓	-.-	-.-	✓	✓	-.-

✓ meets criteria
-.- does not meet operational criteria
Source: US Navy 1997e.

2.4.1 NAS Whidbey Island, Washington

NAS Whidbey Island is too far from adequate training ranges. It would be fiscally and operationally infeasible to upgrade existing ranges or build new ranges to meet the training requirements of the F/A-18E/F FRS and fleet squadrons.

2.4.2 NAS Fallon, Nevada

NAS Fallon's field elevation of nearly 4,000 feet (1,219 m) msl is too high to meet aircraft performance requirements for FCLPs. Also, the air station is at capacity during the high tempo operations of airwing detachments, precluding the possibility of concurrent F/A-18E/F FRS and fleet squadron operations.

2.4.3 NAWS China Lake, California

NAWS China Lake's field elevation of over 2,283 feet (696 m) msl is too high to meet aircraft performance requirements for FCLPs. Also, the high tempo and stringent research development testing and evaluating (RDT&E) schedule based here preclude the possibility of concurrent F/A-18E/F FRS and fleet squadron operations.

2.4.4 NAWS Point Mugu, California

NAWS Point Mugu's nearest outlying field for FCLPs is too far and operationally inefficient to meet training requirements. Building a second parallel runway (similar to that proposed at NAF El Centro) would be infeasible due to land acquisition problems. Also, NAWS Point Mugu's location in relation to adequate

air-to-ground training ranges would require transiting the congested Los Angeles International Airport airways, a significant operational constraint.

2.4.5 NAS North Island, California

NAS North Island's current operations, proximity to San Diego's commercial airport, and airfield layout preclude the required additional operations of the F/A-18E/F FRS and fleet squadrons. Specifically, FCLPs cannot be conducted at the base, and there is no outlying field within 50 nautical miles of the facility.

2.4.6 Marine Corps Air Station (MCAS) Miramar, California

Current high tempo operations of the United States Marine Corps (USMC) F/A-18 squadrons preclude the required additional operations of the F/A-18E/F FRS and fleet squadrons.

2.4.7 MCAS Yuma, Arizona

Current high tempo operations of this joint military USMC/civilian airfield, including the nearby training ranges, precludes the required additional F/A-18E/F operations of the FRS and fleet squadrons.

2.5 Comparison of Alternatives

Tables 2-10, 2-11, and 2-12 compare the construction and regulatory requirements and significant impacts and mitigations occurring at each alternative siting facility. Table 2-10 compares the construction requirements at each base; Table 2-11 indicates the permits and regulatory considerations required for implementing the proposed action at each alternative base; and Table 2-12 summarizes the significant impacts and mitigations identified for the proposed action at each alternative base.

Table 2-10
Comparison of F/A-18E/F Facilities Construction Requirements

F/A-18E/F Requirement	NAS Lemoore	NAF El Centro
Operational Facilities		
Parallel Runway 1	☐	☐
Parallel Runway 2	☐	■
Taxiways	☐	■
Combat Aircraft Loading Area	☐	◧
Training Facilities		
Maintenance Hangar (FRS)	◫	■
NAMTRA	◧	■
Strike Fighter Weapons School	◧	■
Flight Simulator Facility	☐	■
Organizational Maintenance Facilities		
Maintenance Hangar (Fleet Squadrons)	◫	■
Intermediate Maintenance Facilities		
Airframe Shop	◫	■
Engine Maintenance Shop	◧	■
Engine Test Cell	☐	■
Power Check Pad	☐	☐
Avionics Shop	☐	■
Aviation Armament Shop	■	■
Aviation Life Support System Shop	☐	■
Battery Shop	☐	■
Aircraft Ground Support Equipment Shop	☐	■
Ground Support Equipment Holding Shed	☐	■
Supply Facilities		
General Warehouse Navy	☐	■
General Storage Shed	☐	■
Open Storage Area	☐	◧
External Fuel Tank Storage	☐	■
Personnel Support Facilities		
Administrative Offices	☐	■
Dining Facility for Enlisted Personnel	☐	◧
Enlisted Personnel Club	☐	◧
Dental Office/Clinic	☐	☐
Library	☐	☐

Legend:

■ Construction required
◧ Facility expansion required
◫ Facility modification required
☐ Existing facilities adequate

Table 2-10
Comparison of F/A-18E/F Facilities Construction Requirements *(continued)*

F/A-18E/F Requirement	NAS Lemoore	NAF El Centro
Personnel Support Facilities (cont.)		
Exchange	☐	■
Commissary	☐	■
Credit Union	☐	◧
Hobby Shop - Crafts	☐	◧
Hobby Shop - Automotive	☐	◧
Equipment Rental Center	☐	◧
Bowling Center	☐	◧
Fitness Center	☐	◧
Indoor Playing Courts	☐	◧
Morale, Welfare and Recreation Facilities	☐	◧
Youth Center	◧	■
Child Development Center	◧	■
Counseling Assistance Center	■	☐
Religious Ministry Facility	☐	◧
Housing		
BOQ	☐	◧
BEQ (E5-6 to E6)	☐	◧
BEQ (E1 to E4)	◧	◧
Officer Family Housing	☐	◧
Enlisted Family Housing (E7 to E9)	☐	◧
Enlisted Family Housing (E1 to E6)	◧	◧
Utilities		
Wastewater Treatment	☐	☐
Water	☐	☐
Natural Gas/Electricity	☐	◧
Stormwater	☐	☐

Legend:

■ Construction required
◧ Facility expansion required
◫ Facility modification required
☐ Existing facilities adequate

Table 2-11
Potentially Required Permits and Agency Consultation

Permit/Consultation	Agency	NAS Lemoore Action Needed	NAF El Centro Action Needed
Clean Air Act (CAA) Conformity Determination	US Environmental Protection Agency, California Air Resources Board, local Air Pollution Control District (APCD)	San Joaquin Valley Unified APCD. Emissions are above de minimis levels for all nonattainment pollutants. Need conformity determination.	Imperial County APCD. Emissions are above de minimis levels for all nonattainment pollutants. Need conformity determination.
Stationary Air Emission Source Permits	Appropriate local APCD	Any boilers for new buildings may require permits. Depending on their size, backup generators, compressors, degreasing tanks, or related equipment may require permits.	A permit may be necessary for the new fuel handling facilities and jet engine test cell. Any boilers for new buildings may require permits. Depending on their size, backup generators, compressors, degreasing tanks, or related equipment may require permits.
CWA, Section 401/402	Regional Water Quality Control Board (RWQCB)	Obtain RWQCB stormwater permits prior to construction.	Obtain RWQCB stormwater permits prior to construction.
CWA, Section 402	RWQCB	Existing National Pollutant Discharge Elimination System (NPDES) permit restrictions for wastewater discharge would not be exceeded.	Modification of existing NPDES permit restrictions for wastewater would be required.

Table 2-12
Summary of Significant Environmental Impacts and Mitigations

	Alternative Basing Sites	
Resource Category	**NAS LEMOORE**	**NAF EL CENTRO**
Land Use and Airspace	No significant impacts.	*Impact 1. Consistency with AICUZ Land Use Compatibility Guidelines: Noise.* A significant but mitigable impact would occur at NAF El Centro from locating administration, personnel support, child development center, and housing facilities in an 85-dB CNEL noise contour. These uses are identified as clearly incompatible with this noise level. *Mitigation 1.* Do not locate the noise-sensitive facilities within the boundaries of NAF El Centro. Identify areas off-base with compatible noise environments for location of these facilities. Work with local agencies and the communities to implement development plans for these facilities. Should the action be located at NAF El Centro, off-base property would be procured for development of these facilities. *Impact 2 Exceedance of imaginary surface restrictions.* A significant but mitigable impact would occur at NAF El Centro from locating F/A-18E/F facilities within the helicopter imaginary surface restrictions. The proposed general warehouse, aviation life support system shop and battery shop would be located in this area. The general warehouse could exceed the 150 foot (46 m) height restriction for the helicopter imaginary surface at the end of Runway 3. *Mitigation 2.* The Navy would modify the approach-departure path of the helicopter pad to avoid new structures. Implementing this mitigation would reduce impacts to a less than significant level.
Visual Resources	No significant impacts	No significant impacts
Socioeconomics	*Impact 1: Schools.* A significant but mitigable impact to schools may occur due to the action at NAS Lemoore but could be mitigated by federal payments to eligable school districts. Area schools are either near or over capacity. It is estimated that implementing the proposed action at NAS Lemoore would add between 783 and 1,283 students to area schools in 2004, based on EIFS model estimates and Navy estimates.	No significant impacts

Table 2-12
Summary of Significant Environmental Impacts and Mitigations *(continued)*

Resource Category	Alternative Basing Sites: NAS LEMOORE	Alternative Basing Sites: NAF EL CENTRO
	Mitigation 1. School districts may be eligible for compensation for the addition of federally connected students. Impact aid is intended to compensate local school districts for burdens placed on their resources by federal activity. Schools must apply for impact aid through a competitive process, and funds are paid directly by the Department of Education (US Department of Education 1995). The Navy would assist, to the extent practicable, affected schools in their pursuit for federal impact aid. Implementing this mitigation may reduce this impact to a less than significant level; however mitigation may be inadequate because of funding shortfalls in recent years.	
Cultural Resources	No significant impacts	No significant impacts
Traffic and Circulation	*Impact 1 Signalized intersection LOS (Grangeville Road/SR-41.* A significant but mitigable impact would occur at the signalized intersection of Grangeville Road and SR-41 during the PM peak hour, where levels of service would change from LOS B to LOS E. Eastbound project traffic coming from the operations gate would be the primary contributor of traffic to the intersection. *Mitigation 1.* Increase the signal cycle length during the PM peak hour. With the change in cycle length from 80 to 90 seconds, the intersection of Grangeville Road/SR-41 would operate at LOS C during the PM peak hour. Implementing this mitigation would reduce the impact to a less than significant level. If the NAS Lemoore alternative is selected, the Navy will request that Caltrans consider changing the signal cycle length during the PM peak hour. Implementation of this change would be based on either the analysis performed for the EIS or Caltrans's own evaluation and on discussions between the Navy and Caltrans.	*Impact 1 Unsignalized intersection LOS (Bennett Road/Evan Hewes Highway).* A significant but mitigable impact would occur at the unsignalized intersection of Bennett Road and Evan Hewes Highway, where levels of service would change from LOS A to LOS F during the AM and PM peak hours. Impacts at this intersection would result from the westbound right turn movement from Evan Hewes onto the base and the southbound left turn movement onto Evan Hewes from the base. *Mitigation 1.* Install a signal at the intersection of Bennett Road and Evan Hewes Highway. The improvement would improve levels of service at this intersection to LOS B and C during the AM and PM peak hours, respectively. The intersection would meet Caltrans peak-hour signal warrants. Implementing this mitigation would reduce the impact to a less than significant level. If the NAF El Centro alternative is selected, the Navy will request that the Imperial County Public Works Department consider installing a signal at this intersection. Implementing this change would be based on either the analysis performed for the EIS or Imperial County Public Works own evaluation and on discussions between the Navy and Imperial County Public Works. *Impact 2 Unsignalized intersection LOS (Forrester Road/Evan Hewes Highway).* A significant but mitigable impact would occur at the unsignalized intersection of Forrester Road and Evan

Table 2-12
Summary of Significant Environmental Impacts and Mitigations *(continued)*

Resource Category	Alternative Basing Sites: NAS LEMOORE	Alternative Basing Sites: NAF EL CENTRO
		Hewes Highway, where levels of service would change from LOS A to LOS F during the AM and PM peak hours. *Mitigation 2.* Install a signal at the intersection of Forrester Road and Evan Hewes Highway. This would improve intersection operation to LOS C and B during the AM and PM peak hours, respectively. The intersection would meet Caltrans peak-hour signal warrants. Implementing this mitigation would reduce the impact to a less than significant level. If the NAF El Centro alternative is selected, the Navy will request that the Imperial County Public Works Department consider installing a signal at this intersection. Implementing this change would be based on either the analysis performed for the EIS or Imperial County Public Works own evaluation and on discussions between the Navy and Imperial County Public Works.
Air Quality	*Impact 1: Clean Air Act Conformity.* Significant but mitigable increases in the emissions of ozone and PM_{10} precursors would occur from implementing the proposed action at NAS Lemoore. Emission sources under Navy control would result in incremental increases in nitrogen oxides, reactive organic compounds and PM_{10} that exceed the relevant de minimis thresholds for the San Joaquin Valley. Consequently, a conformity determination is required and has been included in Appendix E. Aircraft operations would be the largest source of long term emissions associated with the proposed action. Emissions associated with aircraft operations would come from actual flight activity plus in-frame engine run-up tests performed after engine maintenance. Additional emissions would come from the use of aircraft support equipment. Airfield facilities constructed at NAS Lemoore would include fixed point utility systems, thus minimizing the use of portable generators, air compressors, and air start units. No expansion of aviation fuel handling facilities is anticipated, although annual aviation fuel use would be about 4 million gallons per year. Because JP-5 fuel has a very low volatility, resulting emission quantities would be small.	*Impact 1: Clean Air Act Conformity.* Significant but mitigable increases in the emissions of ozone and PM_{10} precursors would occur from implementing the proposed action at NAF El Centro. Emission sources under Navy control would result in incremental increases in reactive organic compounds, nitrogen oxides, and PM_{10} that exceed the relevant de minimis thresholds for the Salton Sea Air Basin. Consequently, a conformity determination would be required for the NAF El Centro Alternative. A draft conformity determination analysis is provided in Appendix E. Aircraft operations would be the largest source of long term emissions associated with this alternative. Emissions associated with aircraft operations would come from actual flight activity plus in-frame engine run-ups performed after engine maintenance. Additional emissions considered for CAA conformity analyses would come from the use of aircraft support equipment and miscellaneous engine-powered portable or stationary equipment used for aircraft and engine maintenance. Airfield facilities at NAF El Centro include fixed point utility systems, thus minimizing the use of portable generators, air compressors, and air start units. Base-related vehicle travel would be an additional source of long term emissions. Maximum conformity-related emissions would occur at the end of Phase 2. Conformity-related ozone precursor emissions would be

Table 2-12
Summary of Significant Environmental Impacts and Mitigations *(continued)*

Resource Category	Alternative Basing Sites	
	NAS LEMOORE	NAF EL CENTRO
	Maximum conformity-related ozone precursor emissions would be 340.12 tons (308.55 metric tons) per year of reactive organic compound and 304.77 tons (276.48 metric tons) per year of nitrogen oxides. PM_{10} emissions would increase by 167.86 tons (152.28 metric tons) per year. These emission quantities exceed the relevant de minimis thresholds for San Joaquin Valley (50 tons [45 metric tons] per year for ozone precursors and 70 tons [64 metric tons] per year for PM_{10} precursors). When Castle Air Force Base was closed, the resulting emission reductions were documented and assigned to NAS Lemoore and the Federal Aviation Administration (FAA) for subsequent use in demonstrating CAA conformity for future federal agency actions within the San Joaquin Valley. These conformity-related offsets can only be used for CAA conformity demonstration purposes. Conformity-related offsets transferred to NAS Lemoore totaled 100.00 tons (90.72 metric tons) per year of reactive organic compound emissions, 367.10 tons (333.03 metric tons) per year of nitrogen oxide emissions, and 151.60 tons (137.53 metric tons) per year of PM_{10} emissions. Conformity-related offsets transferred to the FAA totaled 2,311.20 tons (2,096.69 metric tons) per year of reactive organic compound emissions and 642.70 tons (583.05 metric tons) per year of nitrogen oxide emissions. The conformity-related offsets previously transferred to NAS Lemoore exceed the conformity requirements for nitrogen oxide emissions but are not sufficient to meet the conformity requirements for reactive organic compounds or PM_{10}. Additional conformity-related offsets will be transferred to NAS Lemoore by the FAA to assist in meeting CCA conformity requirements for the proposed action. Those transferred offsets in combination with existing conformity-related offsets and interpollutant offsets will allow conformity demonstration requirements to be met.	495.35 tons (449.37 metric tons) per year of reactive organic compounds and 414.62 tons (376.14 metric tons) per year of nitrogen oxides. PM_{10} emissions would increase by 235.48 tons (213.62 metric tons) per year. These emission quantities exceed the de minimis thresholds for the Salton Sea Air Basin (100 tons [91 metric tons] per year for ozone precursors and 100 tons [91 metric tons] per year for PM_{10} precursors). CAA conformity rules require that additional conformity offsets be arranged or that relevant SIP documents be revised to account for the added emissions before the F/A-18E/F action can be approved at NAF El Centro. A formal CAA conformity determination would be required to demonstrate that net emission increases have been addressed as required by the EPA conformity rule. A draft conformity determination analysis is provided in Appendix E. Because the NAF El Centro Alternative is not the preferred alternative, the draft conformity determination analysis in Appendix E does not seek to identify the extent to which compensating emission offsets may be available.

Table 2-12
Summary of Significant Environmental Impacts and Mitigations *(continued)*

Resource Category	Alternative Basing Sites: NAS LEMOORE	Alternative Basing Sites: NAF EL CENTRO
	Mitigation 1: Reserved conformity offsets held by NAS Lemoore will be supplemented by 218.28 tons (198.02 metric tons) per year of reactive organic compound emission offsets transferred from the FAA to NAS Lemoore. That will leave a deficiency of 21.84 tons (19.81 metric tons) per year of reactive organic compound emissions, a surplus of 62.33 tons (56.54 metric tons) per year of nitrogen oxide emissions, and a deficiency of 16.26 tons (14.75 metric tons) per year of PM_{10} emissions. Nitrogen oxide emissions are recognized by the San Joaquin Valley Unified Air Pollution Control District as precursors for both ozone and PM_{10}. The surplus nitrogen oxide offsets can be used as interpollutant offsets to compensate for the deficiency in reactive organic compound and PM_{10} emissions. Accounting for the interpollutant offsets will leave a surplus of 24.24 tons (21.99 metric tons) per year of unused conformity offsets of nitrogen oxide emissions.	*Mitigation 1a:* To compensate for the net increase in ozone and PM_{10} precursor emissions, the Navy could formally request the Imperial County Air Pollution Control District to modify the ozone and PM_{10} SIPs to account for increased aircraft operations at NAF EL Centro. *Mitigation 1b:* As an alternative to Mitigation 1a, the Navy could seek to obtain emission offsets from sources in the Salton Sea Air Basin to compensate for the net emissions increase at NAF El Centro.
	Impact 2: Increased Emissions. Significant but mitigable increases in the overall emissions of ozone precursors would occur from implementing the proposed action at NAS Lemoore. Emission sources operating under air quality permits include on-base service stations, engine and airframe maintenance facilities (paint, solvent, and abrasive blasting equipment), central boilers for hangars and BEQ facilities, and engine test cells. Important indirect emission sources not under Navy control include household vehicle travel for non-work purposes and natural gas use by off-base households. Modifications to existing maintenance facilities may require new or amended air quality permits. New central boilers and the new engine test cell would require air quality permits. Some new or replacement equipment (such as stationary generators, compressors, etc.) might require new permits from the San Joaquin Unified Air Pollution Control District. Requirements for permits or permit modifications are not in themselves significant impacts. Overall emissions of ozone and PM_{10} precursors associated with Phase 1 the F/A-18E/F action would be 384.23 tons (348.57 metric tons) per year of reactive organize compounds, 366.93 tons (332.87 metric tons) per year of nitrogen oxides, and 226 282.61 tons (256.38 metric tons) per year of PM_{10}. These emission	*Impact 2: Increased Emissions.* Significant but mitigable air quality impacts would result from emissions generated by activity associated with basing F/A-18 E/F aircraft at NAF El Centro. Construction of required facilities would create temporary sources of air pollutant emissions. Aircraft operations, aircraft maintenance, and vehicle travel by added military and civilian personnel would be the major sources of long-term emissions. Emissions associated with aircraft operation would come from actual flight activity plus in-frame engine run-up tests performed after engine maintenance. Aircraft operations would be the largest source of long term emissions associated with this alternative. Emissions associated with aircraft operations would come from actual flight activity plus in-frame engine run-ups performed after engine maintenance. Additional emissions would come from the use of aircraft support equipment and miscellaneous engine-powered portable or stationary equipment used for aircraft and engine maintenance. Engine test cell operations and chemicals used for aircraft and engine maintenance would also be meaningful emission sources. Base-related vehicle travel plus other household travel associated with added personnel would be the second largest source of emissions associated with this alternative.

Table 2-12
Summary of Significant Environmental Impacts and Mitigations *(continued)*

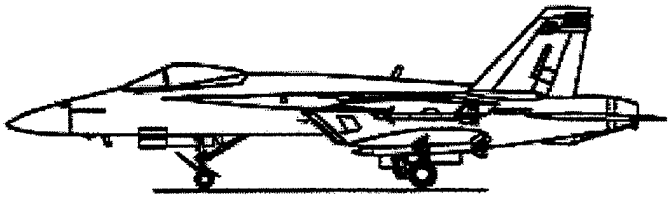
Resource Category	Alternative Basing Sites: NAS LEMOORE	Alternative Basing Sites: NAF EL CENTRO
	increases exceed the numerical values used to define a major stationary source under the SJVUAPCD Rule 2201 (50 tons [45 metric tons] per year for ozone precursors and 70 tons [64 metric tons] per year for PM_{10}), and represent a significant impact in a nonattainment area. Phase 2 of the proposed action will have lower emissions than the maximum reached at the end of Phase 1. There will be no personnel increases at NAS Lemoore during Phase 2, and no new construction projects. Aircraft replacements will occur for six of the existing ten F/A-18C/D fleet squadrons at NAS Lemoore. In addition, the existing F/A-18C/D FRS squadron will be reduced in size from 36 aircraft to 10 aircraft by the end of Phase 2. Eliminated F/A-18C/D FRS squadron operations more than compensate for the net effects of changing fleet squadron aircraft models. Comparison of the overall emission estimates at the bottom of Tables 4-22 and 4-23 identifies the reductions associated with Phase 2: 129.63 tons (117.60 metric tons) per year of reactive organic compound emissions, 29.50 tons (26.76 metric tons) per year of nitrogen oxide emissions, and 70.13 tons (63.62 metric tons) per year of PM_{10} emissions. *Mitigation 2:* Conformity-related emission sources have been offset as discussed under Mitigation 1, above. Other emission sources associated with the proposed action are at least partially accounted for by source category growth factors used in the emission forecasts contained in the San Joaquin Valley ozone and PM_{10} SIPs. In addition, stationary sources requiring permits from the San Joaquin Valley Unified Air Pollution Control District may be required to arrange additional emission offsets as part of the permit process. In combination, these considerations provide adequate mitigation for the overall emissions increases associated with the proposed action.	The aircraft engine test cell would require an air quality permit from the Imperial County Air Pollution Control District (APCD). Boilers used for space heating and water heating in hangars, housing facilities, office buildings, and personnel support facilities would also require air quality permits from the APCD. Expanded fuel storage and handling facilities might also require a permit from the APCD, although these facilities might be exempted because the volatility of jet fuel is very low. Any gasoline service station operated by NAF El Centro would also require an air quality permit. At the end of Phase 2, ozone precursor emissions would be 582.94 tons (528.83 metric tons) per year of reactive organic compounds and 531.39 tons (482.07 metric tons) per year of nitrogen oxides. PM_{10} emissions would increase by 458.62 tons (416.05 metric tons) per year. These emission quantities exceed the numerical values used to define a major stationary source in the Salton Sea Air Basin, and thus represent a significant impact. *Mitigation 2a:* Same as Mitigation 1a. *Mitigation 2b:* Same as Mitigation 1b.

Table 2-12
Summary of Significant Environmental Impacts and Mitigations *(continued)*

Resource Category	Alternative Basing Sites: NAS LEMOORE	Alternative Basing Sites: NAF EL CENTRO
Noise	No significant impacts.	*Impact 1. Additional Aircraft Operational Noise.* A significant and not mitigable noise impact would result from increased flight operations associated with basing of F/A-18E/F aircraft at NAF El Centro. The 65-dB CNEL contour would encompass significant off-base areas. The City of Imperial would be encompassed by the 65- dB CNEL contour, and the community of Seeley and at least two of the three schools in Imperial would be impacted by CNEL values above 65 dB.
Biological Resources	No significant impacts.	*Impact 1: Special Status Species.* A significant but mitigable impact would occur to the western burrowing owl, a California and federal species of concern, at NAF El Centro. Western burrowing owls were observed during a July 29, 1997 site visit at the intersection of taxiway D and taxiway E, and at an area north of the main runway. These areas are adjacent to the proposed site for construction of the maintenance hangar (FRS), maintenance hangar (fleet squadrons), aviation life support system shop, battery shop, and parallel runway and associated taxiway. Increased activity may cause western burrowing owl to abandon these areas. *Mitigation 1.* Conduct a pre-construction survey within the disturbed habitat to ensure that no burrowing owls are nesting in the area and to determine if the site is burrowing owl habitat. If owls are nesting, move the nests to a new area with artificial nest burrows in place. Implementing these mitigation measures would reduce the impact to a less-than-significant level. No Section 7 consultation would be required under the Endangered Species Act.
Hydrology and Surface Water Quality	No significant impacts.	No significant impacts.
Utilities and Services	No significant impacts	No significant impacts.
Public Health and Safety	No significant impacts	No significant impacts.

Table 2-12
Summary of Significant Environmental Impacts and Mitigations *(continued)*

Resource Category	Alternative Basing Sites: NAS LEMOORE	Alternative Basing Sites: NAF EL CENTRO
Hazardous Materials and Waste	*Impact 1. Storage Tanks.* A significant but mitigable impact would occur at NAS Lemoore from storage tanks. NAS Lemoore presently has a base-wide program for jet fuel transportation and storage, as well as refueling facilities for naval aircraft using JP-5 fuel. Based on the 19,925,957 gallons (75,419,747 liters) per year requirement for four squadrons and an FRS, the F/A-18E/F squadrons realignment would require additional fuel storage and supply. The tank capacity at NAS Lemoore is not adequate to meet current and anticipated fuel requirements for the F/A-18E/F aircraft. The existing external fuel tank storage racks are not well suited for use with the larger 480-gallon (1,817-l) versus 330-gallon (1,249-l) external fuel tanks used by the F/A-18E/F. The additional fuel storage would create the potential for exposing the public or environment to hazardous substances.	*Impact 1. Storage Tanks.* A significant but mitigable impact would occur at NAF El Centro from storage tanks. Construction of an aircraft direct fueling station may be necessary to accommodate the 33,301,139 gallons (126,058,130-l) per year requirement for ten F/A-18E/F squadrons and one FRS. The existing external fuel tank storage racks are not well suited for use with the larger 480-gallon (1,817-l) versus 330-gallon (1,249-l) external fuel tanks used by the F/A-18E/F. The additional fuel storage would create the potential for exposing the public or environment to hazardous substances.
	Mitigation 1. Construction of external fuel tank racks would be necessary for secure storage of the 480-gallon (1,817-l) external fuel tanks used by the F/A-18E/F. The base implements plans and programs for fuel storage, but an amendment to these plans and programs would be necessary to include this additional area. Operational requirements and services for fuel storage at the base also would be amended to include the additional area. Following the regulatory requirements for proper installation and monitoring of the additional fuel storage area will decrease the potential exposure of the public or environment to hazardous substances. Implementing this mitigation would reduce the impact to a less than significant level.	*Mitigation 1.* The construction of external fuel tank storage racks would be necessary for secure storage of the 480-gallon (1,817-l) drop tanks, along with the construction of an aircraft direct fueling station. The base implements plans and programs for fuel storage, but an amendment to these plans and programs would be necessary to include these additional areas. Operational requirements and services for fuel storage at the base also would be amended to include the additional area. Following the regulatory requirements for proper installation and monitoring of the external fuel tank storage area will decrease the probability of potential exposure of the public or environment to hazardous substances. Implementing this mitigation would reduce the impact to a less than significant level.



3.0 AFFECTED ENVIRONMENT

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CHAPTER 3
AFFECTED ENVIRONMENT

This chapter contains a description of the existing environmental and socioeconomic conditions at NAS Lemoore and NAF El Centro. The information contained in this chapter is the baseline data used to identify and evaluate any environmental impacts that could result from F/A-18E/F facility development and aircraft operations. Information is presented for the current year, when available, or from documents prepared in previous years.

The setting discussion for each resource area identifies an affected geographic area in which impacts for a particular resource would most likely occur. The existing environment is described for land use and airspace, visual resources, socioeconomics, cultural resources, traffic and circulation, air quality, noise, biological resources, hydrology/surface water quality, utilities and public services, public health and safety, and hazardous materials and wastes.

3.1 LAND USE AND AIRSPACE

This section describes surrounding and on-base land uses at each alternative base. Because the proposed action would add aircraft operations at the receiving base, airspace and ground facilities are part of the affected area. Airspace designations and land use and airspace compatibility guidelines and recommendations related to noise and safety are described.

Definition of Resource

Land Use Designations

Land use designations encompass undeveloped and developed land on-base and in the immediate surrounding area. Undeveloped land commonly is classified as open space, while developed land uses range from residential and commercial to recreational and agricultural. Land use is regulated by military, regional, and local plans and policies that identify the type and extent of uses allowed in specific areas.

Air Space Designations

Airspace also is designated to accommodate certain types of uses, including federal airways, military training routes (MTRs), restricted use airspace, military operations areas (MOAs), and air traffic control authorized airspace (ATCAA). Airspace designations throughout the United States are controlled by the Federal Aviation Administration (FAA) and are applicable to all aircraft. No changes in the FAA airspace designations are proposed as part of this action.

Federal Airways. Federal airways are corridors for civilian air traffic. These airways are designated with a V or a J and a number. V denotes victor corridors that cover up to 18,000 feet (5,486 m) msl, while J is for jet corridors that cover over 18,000 feet (5,486 m) msl.

Military Training Routes. MTRs are military airways, often low altitude routes, used for access to or from MOAs or for cross-country flight practice. MTRs are shown by a visual route (VR) or instrument route (IR) designation (e.g. VR-1257). Visual routes are flown by maintaining a visual reference to the ground at all times with periodic instrument checks of altitude, engine status, and other aircraft conditions. Regulations governing visual flight are called visual flight rules (VFR). Instrument routes are flown using instrument flight rules (IFR), which enable the pilot to fly without visual reference to the ground. MTRs are specifically exempted from Navy regulation OPNAV 3710.7Q which requires a minimum altitude of 3,000 feet (914 m) above ground level (AGL) over noise sensitive areas, such as national parks and wilderness areas.

Restricted Use Airspace. Restricted use airspace is used for military flight training and is not usually accessed by civilian or commercial aircraft for safety reasons.

Military Operations Area. MOAs accommodate aircraft maneuvering in airspace adjacent to the restricted areas and are broader and higher than the restricted areas. MOAs can extend up to 18,000 feet (5,486 m) msl but not beyond. Nonhazardous military training activities, such as air combat maneuvers, air intercepts, and aerobatics, are conducted in the MOAs. Civilian aircraft flying by VFR can use the airspace within MOAs at any time, including when military training activities are being conducted. Aircraft using IFR, such as commercial carriers, are not allowed access to MOAs, unless cleared by air traffic control.

Air Traffic Control Assigned Airspace. ATCAAs are similar to MOAs in that they accommodate aircraft maneuvering in airspace adjacent to the restricted areas and are broader and higher than the restricted areas. ATCAAs afford military aircraft the opportunity to fly above 18,000 feet (5,486 m) msl, under direct control of an FAA air route traffic control center (ARTCC). All aircraft in an ATCAA must fly by IFR. ATCAAs are made available when their use will not interfere with other air traffic in that airspace. Most ATCAA military air activity is the same as MOA air activity, with the exception of air-to-air combat training, which usually is not permissible in an ATCAA.

The R-2508 Airspace Complex

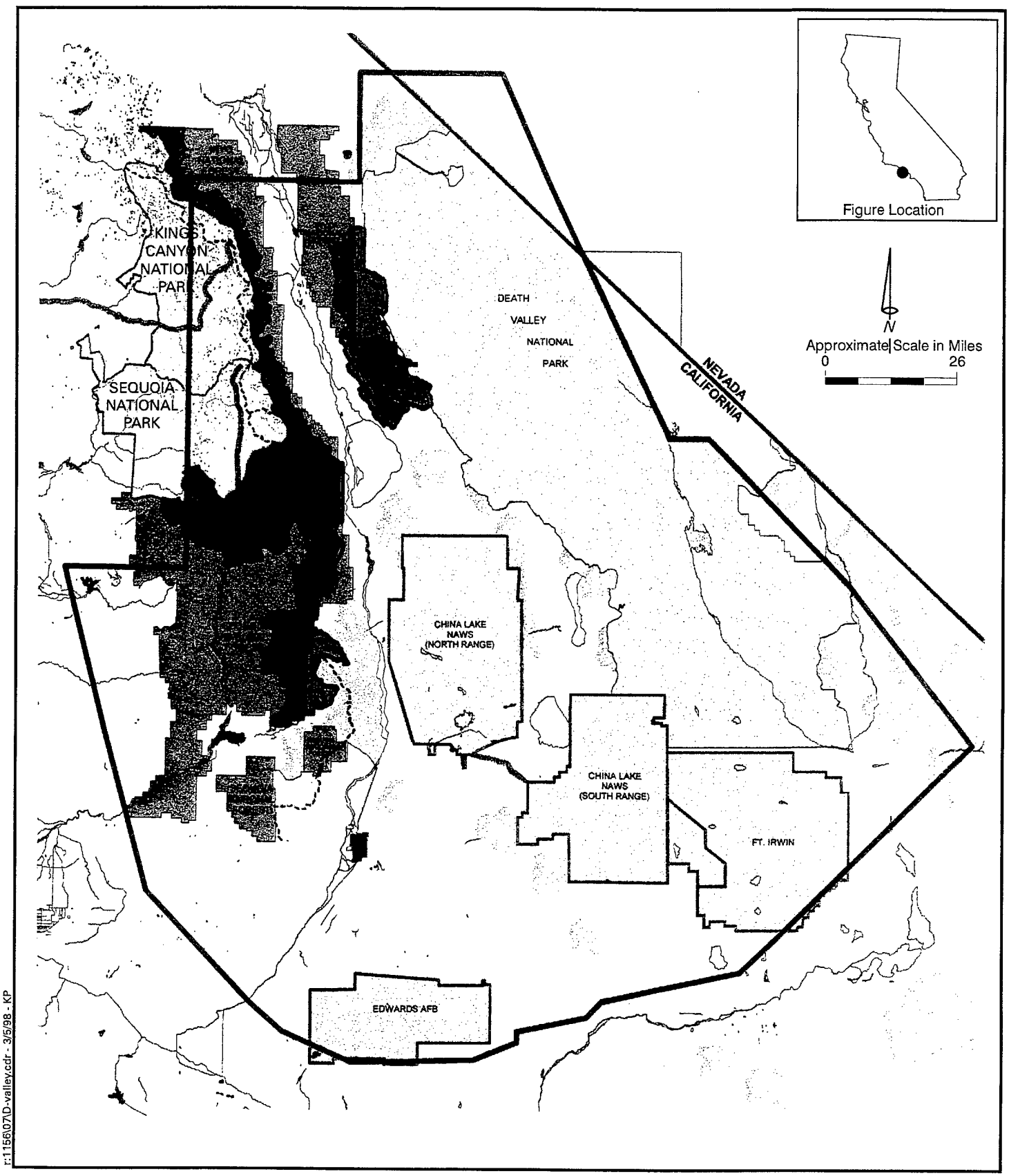
The R-2508 Airspace Complex covers approximately 19,600 square miles in the western Mojave Desert and encompasses portions of Inyo, Fresno, Tulare, Kern, Los Angeles, San Bernardino, and Mono counties in California and a small part of Esmerelda County in Nevada. The complex includes all of the airspace and land owned or managed by the three principal Department of Defense installations in the region: the Air Force Flight Test Center, the Fort Irwin National Training Center, and the Naval Air Weapons Station China Lake. There are a variety of other land uses within the R-2508 Airspace Complex, including other federal lands of the Bureau of Land Management (BLM), National Park Service, US Forest Service, state lands, Native American reservations, city and county land, and private land (US Army Corps of Engineers 1997). See Figure 3-1 for special management areas within R-2508 and Appendix H for excerpts from relevant R-2508 documents that further illustrate the boundaries and sensitive uses encompassed by R-2508.

The R-2508 Airspace Complex is managed by the R-2508 Joint Policy and Planning Board (JPPB), consisting of commanders from each of the three Department of Defense installations. The JPPB delegates day-to-day management of the Complex to the R-2508 Complex Control Board (CCB). The R-2508 Central Coordinating Facility (CCF) at Edwards Air Force Base manages scheduling and real-time coordination of the shared-use airspace under the direction of the CCB (US Navy 1997o).

The R-2508 Airspace Complex consists of three types of special use airspace: restricted areas, MOAs, and ATCAA (see Figure 3-2). The vertical dimensions differ for each type of airspace; restricted areas extend from the ground surface to unlimited altitudes, MOAs extend from 200 feet (61 m) AGL to 18,000 feet (5,486 m) msl (with the exception of two MOAs), and ATCAA extend from 18,000 feet (5,486 m) msl to 60,000 feet (18,288 m) msl.

The R-2508 airspace is used by a variety of aircraft from all branches of the military, as well as by civilian aircraft. Activities within the MOAs include low level flights, air combat maneuvering training, routine research and development/testing and evaluation, and routine training. Refueling, supersonic operations, cargo/personnel drops, ordnance drops, and special missions are conducted in designated areas (US Army Corps of Engineers 1997). Operations within R-2508 are subject to limitations, as detailed below (see also Appendix H).

Military aircraft adhere to Federal Air Regulations and Department of Defense regulations pertaining to supersonic operations, endangering private property, and annoyance of civilians. Although OPNAV 3710.7Q requires all Navy aircraft to fly at least 3,000 feet (914 m) AGL over noise sensitive areas (e.g. breeding farms, resorts, beaches, or those areas designated by the Department of Interior as national parks, national monuments, and national recreational areas), special use



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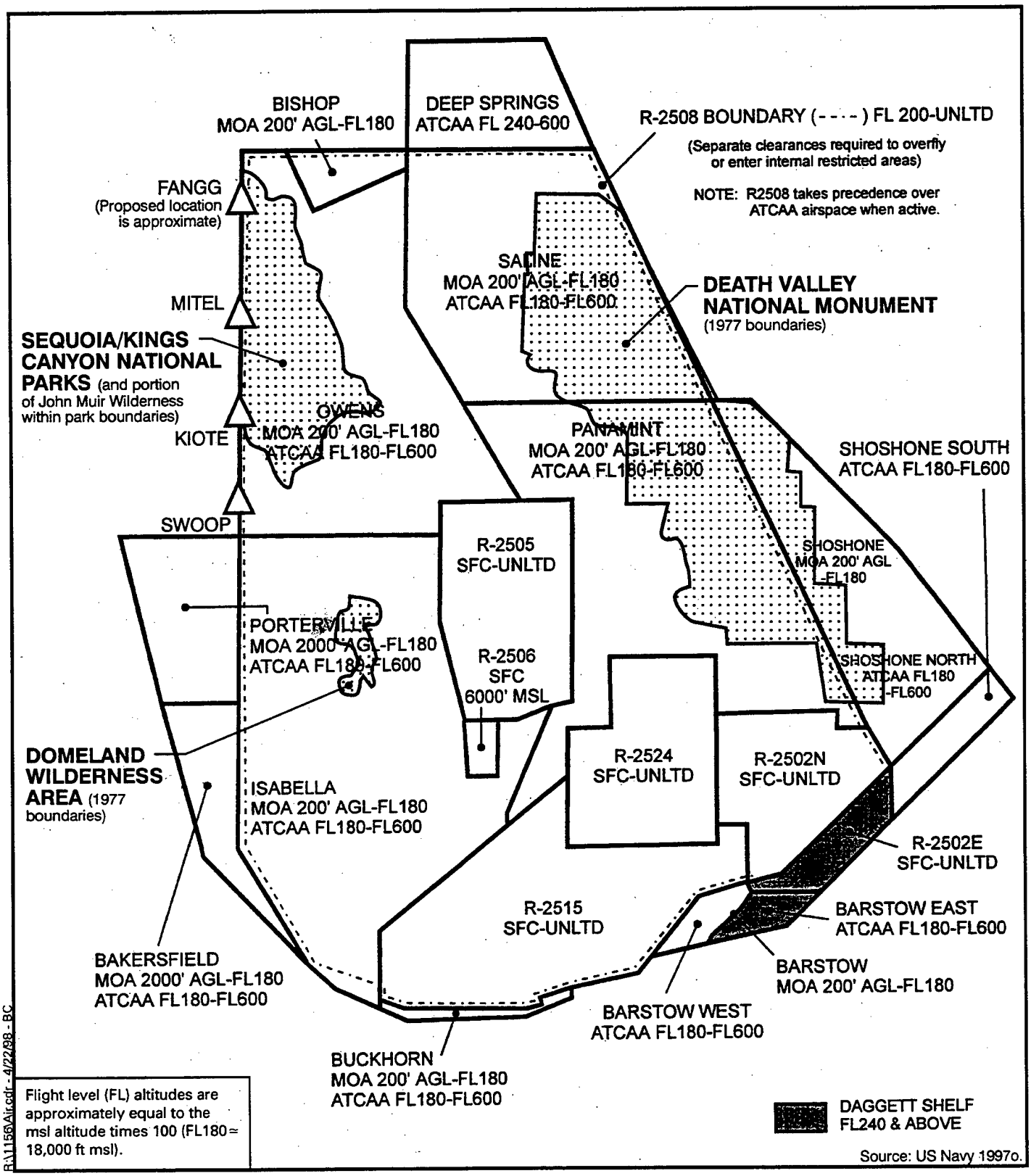
- R-2508 Airspace Boundary
- Military Installation Boundary
- National Park
- National Forest
- State Park
- Wilderness (National Forest, BLM, or Joint National Forest / BLM)
- National Forest or Joint National Forest/ BLM Wilderness
- BLM Wilderness
- National Scenic Trail
- Wild and Scenic River Corridor
- Surface Water Features

R-2508 Airspace Complex and Special Management Areas

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: US Army Corps of Engineers 1997.

Figure 3-1



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LEGEND:

△ Stereo route fix points for accessing R-2508 Airspace Complex

Designated areas subject to 3,000 feet AGL overflight restriction of the R-2508 Complex

R-2508 Airspace Complex; Horizontal Boundaries and National Park and Wilderness Areas Subject to Flight Altitude Restrictions

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Figure 3-2

Tetra Tech, Inc.

airspace, such as the R-2508 Complex, is specifically exempted from this requirement.

Sensitive land uses within R-2508 are designated and flight restrictions established in the *R-2508 Complex User's Handbook* (US Navy 1997o). Sensitive land use areas for which overflight restrictions or recommendations are established in the *R-2508 User's Handbook* include national parks, wilderness areas, populated areas, roads, airports, areas of seasonal bird activity, hunting areas, and certain commercial operations.

The *R-2508 Complex User's Handbook* states that aircraft shall maintain a minimum altitude of 3,000 feet (914 m) AGL and 3,000 feet (914 m) lateral distance from Sequoia and Kings Canyon National Parks, the portion of the John Muir Wilderness Area within the boundaries of Sequoia and Kings Canyon national parks, the 1977 boundaries of the former Death Valley National Monument, and the 1977 boundaries of the Domeland Wilderness Area. Additional areas of Death Valley National Park and the John Muir Wilderness Area, other wilderness areas, and other public lands within R-2508 are not designated in the *R-2508 User's Handbook* as sensitive areas and are not subject to the 3,000-foot (914 m) AGL flight restriction. See Figure 3-2 for national park and wilderness areas subject to the 3,000 feet (914 m) AGL flight restriction of the R2508 Complex. The *R-2508 Complex User's Handbook* also states that aircraft should maintain a minimum altitude of 1,500 feet (457 m) AGL above specified airports, 3,000 feet (914 m) AGL above specified populated areas within R-2508, and avoid other specified areas such as the Owens Valley, paved roads, and several commercial operations.

Aircraft from NAS Lemoore and NAF EL Centro use the vast areas and the wide variety of services available within the R-2508 Complex to conduct student and operational training flights that are an everyday requirement for all military squadrons. Most recent data indicate 74,456 annual sorties in the R-2508 Complex (Table 3-1), 13 percent of which were from NAS Lemoore.

Flights violating the R-2508 Complex restrictions are handled through a complaint process established by the R-2508 CCF. Each of the three DOD installations within R-2508 has a public affairs office that initially investigates and responds to complaints. The process established by CCF ensures that complaints received by each installation's public affairs office are compiled by the CCF and reported to the CCB. Violations initially are classified as low-level flight, noise, or sonic booms. These complaints are investigated and determined to be a verified violation, an unverified but presumed violation, or a verified non-violation. When violating aircraft can be positively identified, a letter is issued to the immediate superior officer of the squadron involved describing the date, time, and R-2508 Complex restriction that was violated. The immediate superior officer then determines whether action against the violator(s) should be taken by that officer or by the Commanding Officer of the unit involved (US Army Corps of Engineers

Table 3-1
1997 Annual Sorties in the R-2508 Complex

Airspace User	1997	Percent of Total
Edwards Air Force Base	8,059	11%
NAWS China Lake	6,801	10%
NAWS Point Mugu	1,217	2%
NAS Lemoore	9,900	13%
Air Force (other than Edwards Air Force Base)	5,334	7%
Navy/Marine (other than NAS Lemoore)	1,522	2%
Civilian	38,207	51%
Fresno Air National Guard	2,443	3%
Other	973	1%
Total	**74,456**	100%

Source: R-2508 CCF 1997.

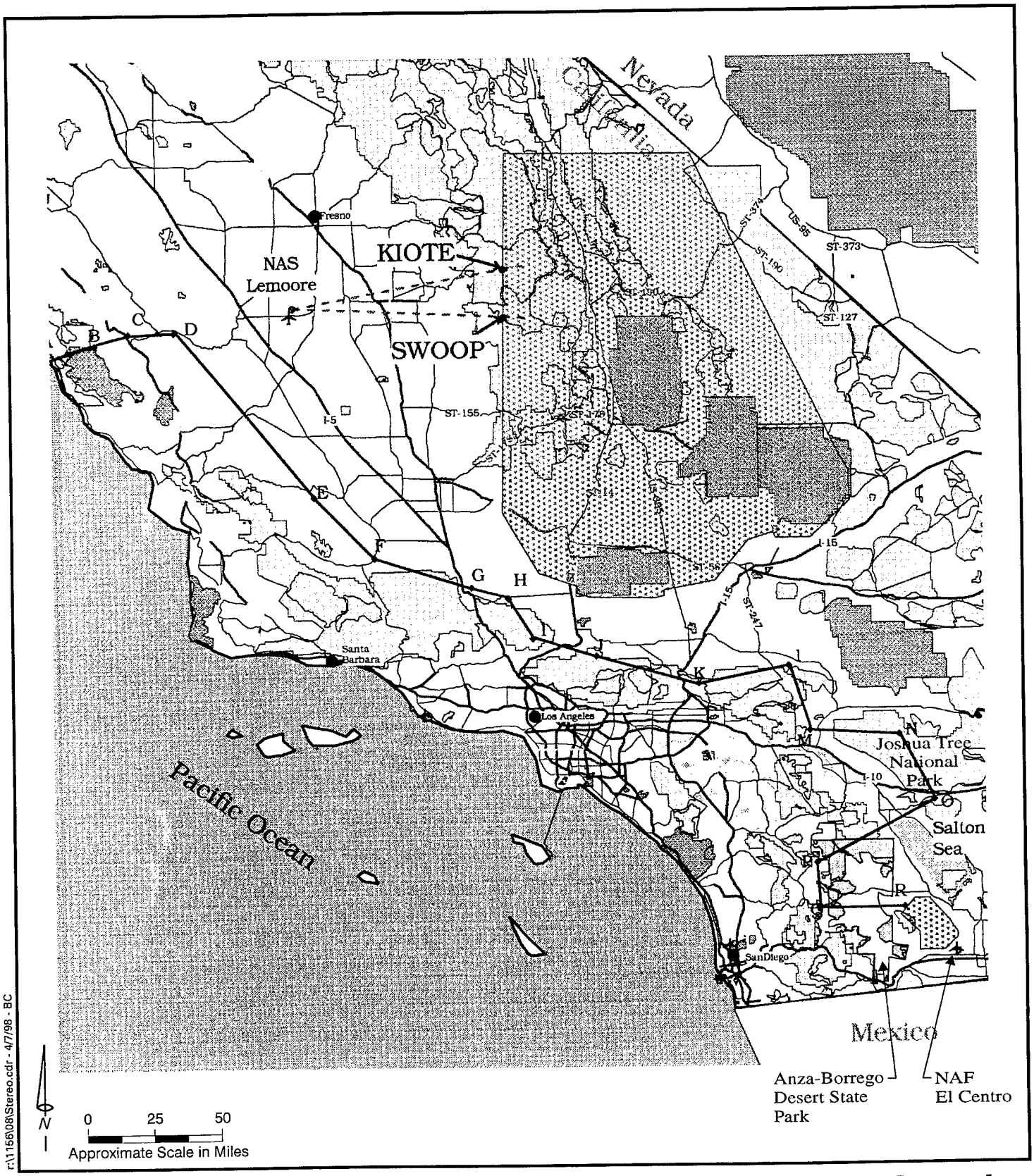
1997). (See Appendix H, page 3-54, of the R-2508 Environmental Baseline Study for further discussion of the R-2508 complaint process.)

Other Affected Airspace

There are approximately 24 MTRs that aircraft stationed at NAS Lemoore or NAF El Centro may use. These MTRs are used by aircraft from all branches of the military but are under the scheduling activity of the Strike Fighter Wing at NAS Lemoore. As discussed previously, MTRs are FAA designated military routes that are often used for low-level flight practice. These routes are used predominantly during the day.

MTRs are specifically exempted from OPNAV 3710.7Q which requires aircraft to maintain 3,000 feet (914 m) AGL over noise sensitive areas, such as national parks and wilderness areas. Allowable flight altitudes are established for each segment within an MTR. None of these MTRs pass over noise sensitive areas except VR-1257, which passes over both Joshua Tree National Park and Anza-Borrego Desert State Park.

VR-1257 extends from north of Morro Bay, near Lopez Point, to the ranges surrounding NAF El Centro (see Figure 3-3). The permitted flight altitude along the route varies from 200 feet (61 m) AGL to 1,500 feet (457 m) AGL. The Navy has a self-imposed minimum flight altitude of 1,500-foot (457 m) AGL along that portion of the route that extends over Joshua Tree National Park. Flight above 1,500 feet (451 m) AGL is not permitted due to the route restrictions and potential conflicts with other FAA-designated flight routes in the area. Flight is permitted through Anza-Borrego Desert State Park at altitudes of 200 feet (61 m) to 1,500 feet (457 m) AGL. In 1997, 164 sorties were flown along VR-1257 in 108 separate



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LEGEND:

- VR-1257
- Stereo Routes
- Military Property
- R-2508
- R-2510
- National Parks, National Forest, and State Parks
- Water
- City / Town
- Highways

Stereo Routes to the R-2508 Complex (via Swoop and Kiote fix points) and the VR-1257 MTR

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Figure 3-3

Source: Wyle Laboratories 1998.

events (some sorties involve more than one aircraft); F/A-18C/D aircraft from NAS Lemoore or detachments temporarily stationed at NAF El Centro accounted for 87 of these sorties.

Regulatory Considerations

Land use on military bases is planned and documented in base master plans as a guide for future growth. One of the primary land use issues addressed in naval air facility master plans is ensuring the protection of aircraft operations at an airfield or in a special use airspace. Land surrounding military bases is regulated by local and regional land use planning requirements.

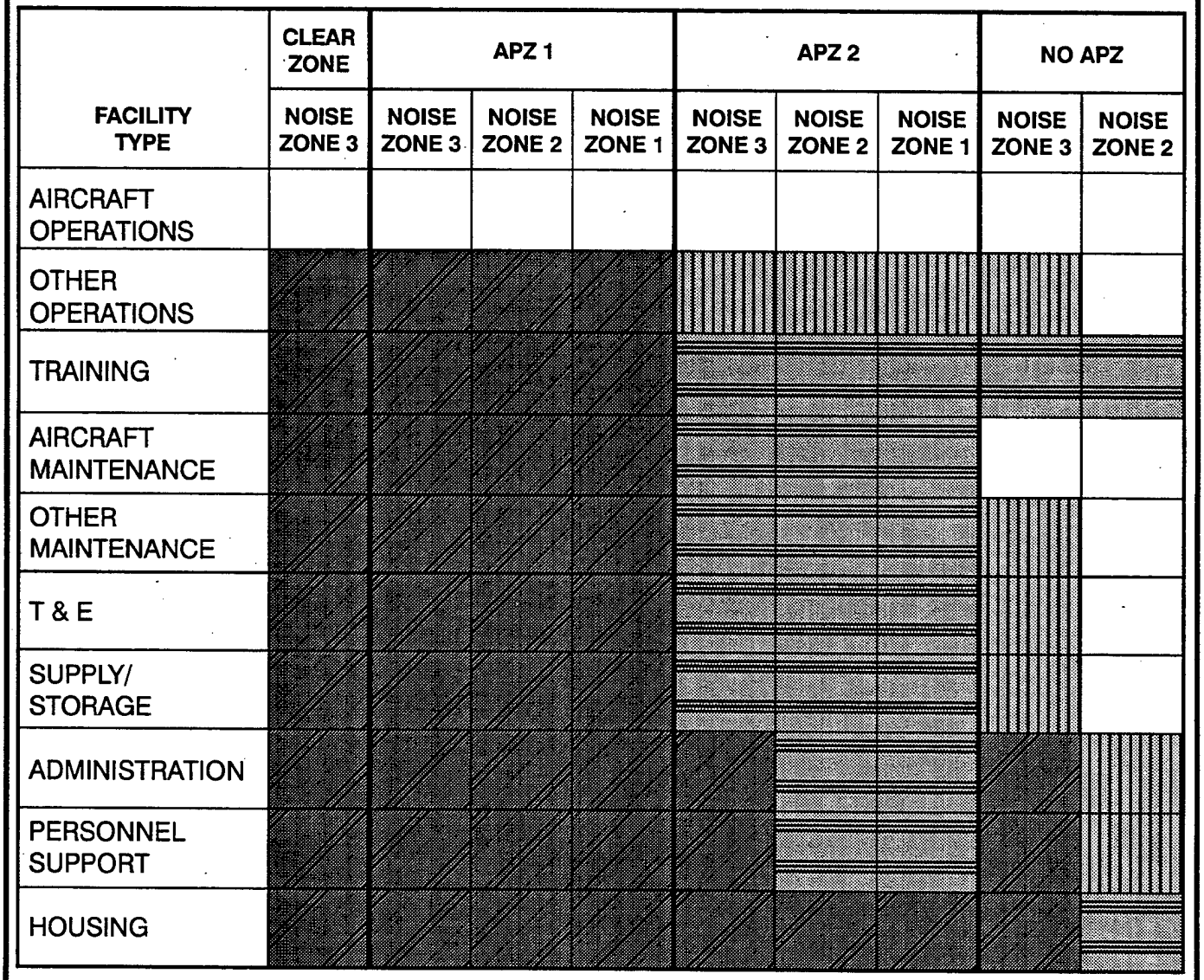
Master Plans. A master plan is used in the short term to site construction projects but also serves as a guide for achieving long-term development objectives. Both of the Navy bases evaluated in this EIS have a master plan that identifies land uses and recommends construction projects to achieve development objectives. The recommendations help to optimize the use of Navy resources and allow increases in operational capabilities.

Air Installation Compatibility Use Zones (AICUZ) Program. The AICUZ program is a component of military base master plans. Its purpose is to prevent incompatible development in areas of high noise, in areas that would expose the public to potential health and safety hazards associated with aircraft operations, and in areas that would jeopardize pilot safety and the operational capability of the air installation. The AICUZ establishes guidelines and provides recommendations for land use planning and policies that affect military installations and surrounding communities. The Navy requires that an AICUZ program address noise levels and accident potential zones (APZs), which then form the basis for on-base land use compatibility.

The AICUZ program identifies land uses that would be compatible with certain noise levels, accident potential, and flight clearance requirements associated with military airfield operations (Figure 3-4). Community noise equivalent levels (CNELs), shown as noise contour lines on AICUZ maps, prescribe what kinds of land uses may occur at certain noise levels. Additional considerations associated with noise are discussed in Section 3.7 of this EIS.

APZs identify areas that would most likely be affected by an accident. The purpose of defining APZs is to restrict surrounding land uses to protect persons, pilots, and property on the ground. Three types of APZs are identified—the Clear Zone, APZ I, and APZ II. The dimensions and applications of these zones are described below.

- *The Clear Zone* lies immediately beyond the end of the runway and outward along the extended runway centerline for a distance of 3,000 feet (914 m). The fan-shaped zone is 1,500 feet (457 m) wide at the end



Noise Zone 1 = < 65 CNEL

Noise Zone 2 = 65-75 CNEL

Noise Zone 3 = > 75 CNEL

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The AICUZ identifies the land uses compatible with noise zones and accident potential zones (APZs).

LEGEND:

- Clearly Compatible
- Normally Compatible
- Normally Incompatible
- Clearly Incompatible

Source: OPNAVINST 11010.36A, Air Installations Compatible Use Zones (AICUZ) Program April 1988.

Land Use Compatibility with AICUZ Zones

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Figure 3-4

of the runway and 2,284 feet (696 m) wide at the point that is 3,000 feet (914 m) from the end of the runway. The clear zone should have no obstructions since it has the highest probability of being affected by accidents.

- *Accident Potential Zone I* is the rectangular area beyond the clear zone that possesses a significant potential for accidents. This zone normally is provided under flight paths that experience 5,000 or more annual operations. Typically, APZ I is 3,000 feet (914 m) wide by 5,000 feet (1,524 m) long and is curved to conform to the shape of the flight paths. The accident potential would be less in this zone than in the clear zone.
- *Accident Potential Zone II* extends beyond APZ I and has a lower potential for accidents. APZ II normally is provided under a flight path whenever an APZ I is required. Dimensions of APZ II are usually 3,000 feet (914 m) wide by 7,000 feet (2,133 m) long, and it is curved to conform to the shape of the flight paths (US Navy 1993b).

Imaginary Surfaces. Another land use compatibility issue associated with airfield operations is the proximity of structures to imaginary surfaces. An imaginary surface is the slope or angle at which an aircraft departs or arrives from an airfield. Imaginary surfaces are another way to describe clearances for air navigation. Federal Aviation Regulations specify a series of imaginary height restriction surfaces surrounding an airport to prevent conflicts with aircraft approach and departure paths.

The FAA considers any terrain or engineered objects that extend above the imaginary surface an obstruction. All obstructions are reviewed by the FAA to determine if they represent a hazard to air navigation. The imaginary surface should not be penetrated and all new development should not extend into the imaginary surfaces. Imaginary surfaces can affect on-base and regional land use planning. Specific imaginary surfaces for airfields are defined below (US Navy 1993b).

- *The Primary Surface* is centered on the runway. It is 1,500 feet (457 m) wide and extends 200 feet (61 m) beyond each end of the runway. Unless required for safe navigation, nothing within the primary surface is acceptable above the runway elevation.
- *The Approach-departure Clearance Surface* flares outward and upward from the primary surface. The surface extends horizontally and vertically at a 50:1 slope until it is 500 feet (152 m) above the airfield. At this point it extends horizontally to a point 50,000 feet (15,240 m) from its beginning. At its beginning, the approach-departure clearance surface is 1,500 feet (457 m) wide. It broadens uniformly at approximately 7.5 degrees to an outer width of 16,000 feet (4,877 m).

- *The Inner Horizontal Surface* is an oval plane 150 feet (46 m) above the airfield, with an outer edge 7,500 feet (2,287 m) from the runway.
- *The Conical Surface* extends horizontally and vertically at a 20:1 slope from the outer edge of the inner horizontal surface. The conical surface stretches 500 feet (152 m) vertically above the airfield and 7,000 feet (2,134 m) horizontally from the outer edge of the inner horizontal surface.
- *The Outer Horizontal Surface* begins at the outer edge of the conical surface, 500 feet (152 m) above the airfield, and extends horizontally for 30,000 feet (9,146 m).
- *The Transitional Surface* is an inclined plane that connects the primary surface and the approach-departure surface. The slope ratio for this surface is 7:1, horizontal to vertical, and falls in upward and outward right angles to the runway centerline and the extended centerline. If any objects penetrate these surfaces, a waiver must be obtained from Naval Air System Command (NAVAIR). These restrictions and regulations are considered during construction activities and military installation planning.

3.1.1 NAS Lemoore Alternative

Affected Area

The affected area for land use includes the base and immediately surrounding area. The affected area for airspace use includes any military airspace associated with the base, land uses below imaginary surface restrictions and land beneath other affected airspace. Imaginary surface restrictions associated with airbase aircraft operations can extend up to 10 miles (16 km) from the base's airfield.

Setting

NAS Lemoore is in the central portion of the San Joaquin Valley, approximately 80 miles (129 km) east of the Pacific Ocean in Fresno and Kings counties. Approximately 15,744 acres (6,372 ha) of Navy-owned land are within Kings County and 3,040 acres (1,230 ha) are within Fresno County. Fresno and Kings counties administer and regulate land uses within their respective boundaries. As a federal property, NAS Lemoore is not within the jurisdiction of either of these counties. When NAS Lemoore was first developed, the counties zoned approximately 108 square miles (180 km^2) of land surrounding the base as agriculture to prevent encroachment of residential development and other land uses that could pose a conflict to the base's mission (US Navy 1994d). In addition, the Navy holds flight easements over 11,020 acres (4,460 ha) of land in both counties.

The closest urban center is Fresno, 35 miles (56 km) north of NAS Lemoore in Fresno County. Other nearby cities in Kings County include Lemoore, 7 miles (11

km) to the east, Hanford, 17 miles (27 km) to the east, and Stratford, 6 miles (9 km) to the southeast (US Navy 1993b).

Regional Land Uses

The primary land use surrounding the base is agriculture, with common crops being cotton, safflower, tomatoes, and various types of hay (Figure 3-5). Off-base land within approximately 4 miles (6 km) of the base airfield is zoned by both Fresno and Kings counties as agriculture for farms with a minimum of 40 acres (16 ha). Off-base land between 4 and 10 miles (6 to 16 km) of the base airfield is zoned by both counties as agriculture for farms with a minimum of 20 acres (8 ha).

On-base Land Uses

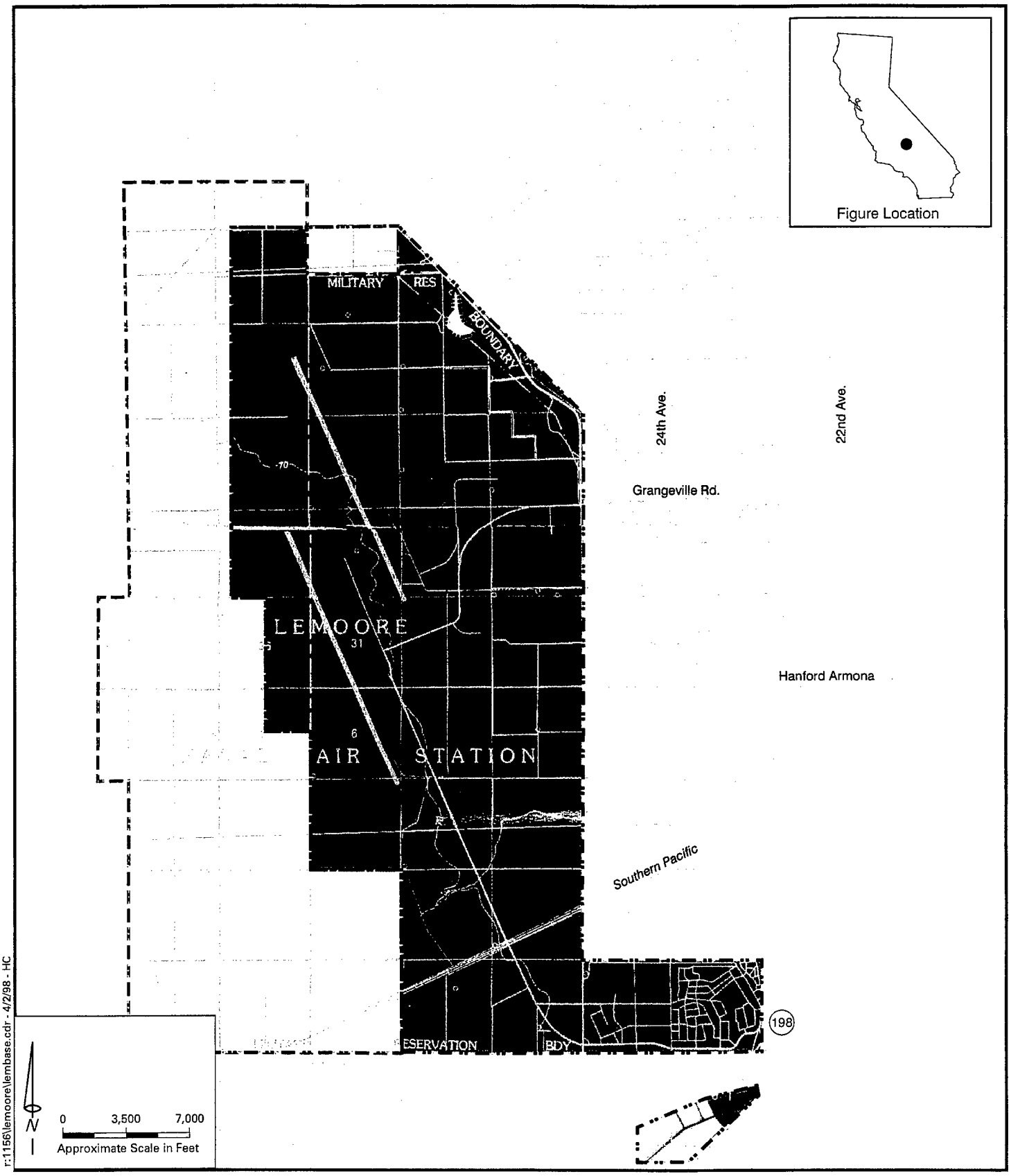
Land uses at NAS Lemoore include developed and undeveloped land. Developed areas are used primarily for operations, administration, and housing. The operations area is in the central part of the base and includes training/operations, public works, maintenance, administration and supply facilities. The landing field at NAS Lemoore consists of two runways, 14R/32L and 14L/32R, both of which are 13,500 feet (4,114 m) long. The operations area is bordered by open space.

The administration/housing area is at the southern end of the base and is separated from the operational area by approximately 3 to 4 miles (5 to 6 km). It provides a range of facilities supporting the base operations and training functions. Housing and personnel support facilities and recreational facilities are the largest area of land use, with some training operations and administration facilities also located in this area. Supplemental base land is outleased for agricultural purposes. Existing land uses and the proposed location of the F/A-18E/F facilities at NAS Lemoore are shown on figures 3-6 and 3-7.

Airspace Designations

The NAS Lemoore airfield is within the control area boundary of the Oakland ARTCC. NAS Lemoore maintains a radar air traffic control facility (RATCF) that controls aircraft traversing the NAS Lemoore airspace. The RATCF extends from ground surface to 15,000 feet (4,572 m) above msl in the Alpha area and from ground surface to 10,000 feet (3,048 m) above msl in the Bravo area. Neighboring RATCFs include the city of Fresno Airport and Castle Air Force Base (now closed). There are other smaller commercial and private airports in the area. The southern border of the NAS Lemoore RATCF is also the border between the Oakland ARTCC and Los Angeles ARTCC. NAS Lemoore coordinates air traffic with the Oakland and Los Angeles ARTCCs and neighboring air traffic control facilities (US Navy 1994d).

Figure 3-8 shows the airspace environment surrounding NAS Lemoore. There is no military airspace associated with NAS Lemoore. Current flight operations require NAS Lemoore aircraft to use the MOA above Fort Hunter Liggett on the coast and the R-2508 Airspace Complex restricted airspace. There are several



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NAS Lemoore is located in a primarily agricultural region.

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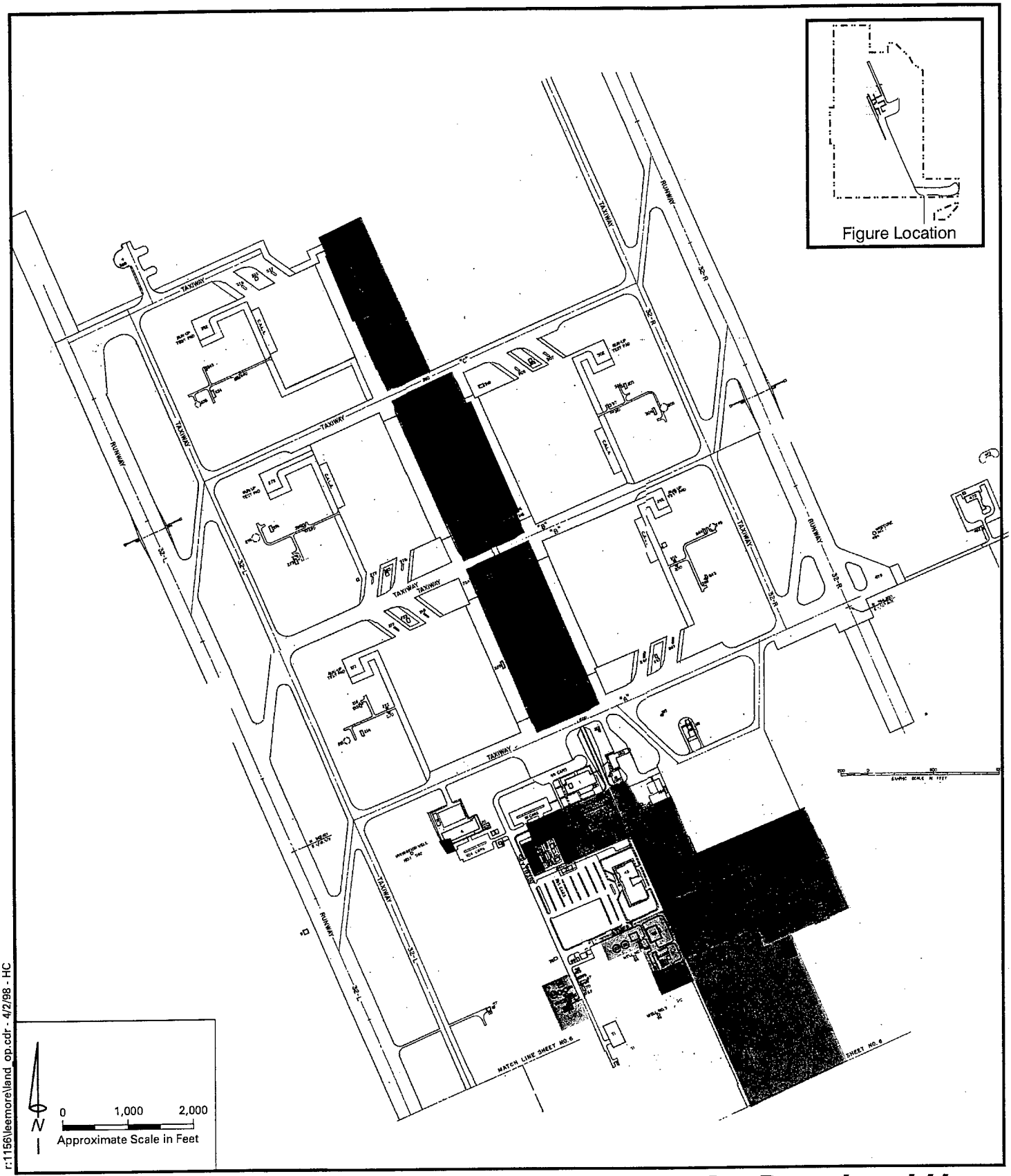
- Open Space/Agriculture
- Military (Navy Property)
- Military (Private Property - Navy Easement)

NAS Lemoore: Regional Land Uses

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: US Navy 1992.

Figure 3-5



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Land use areas identified in the Master Plan are indicative of existing land uses.

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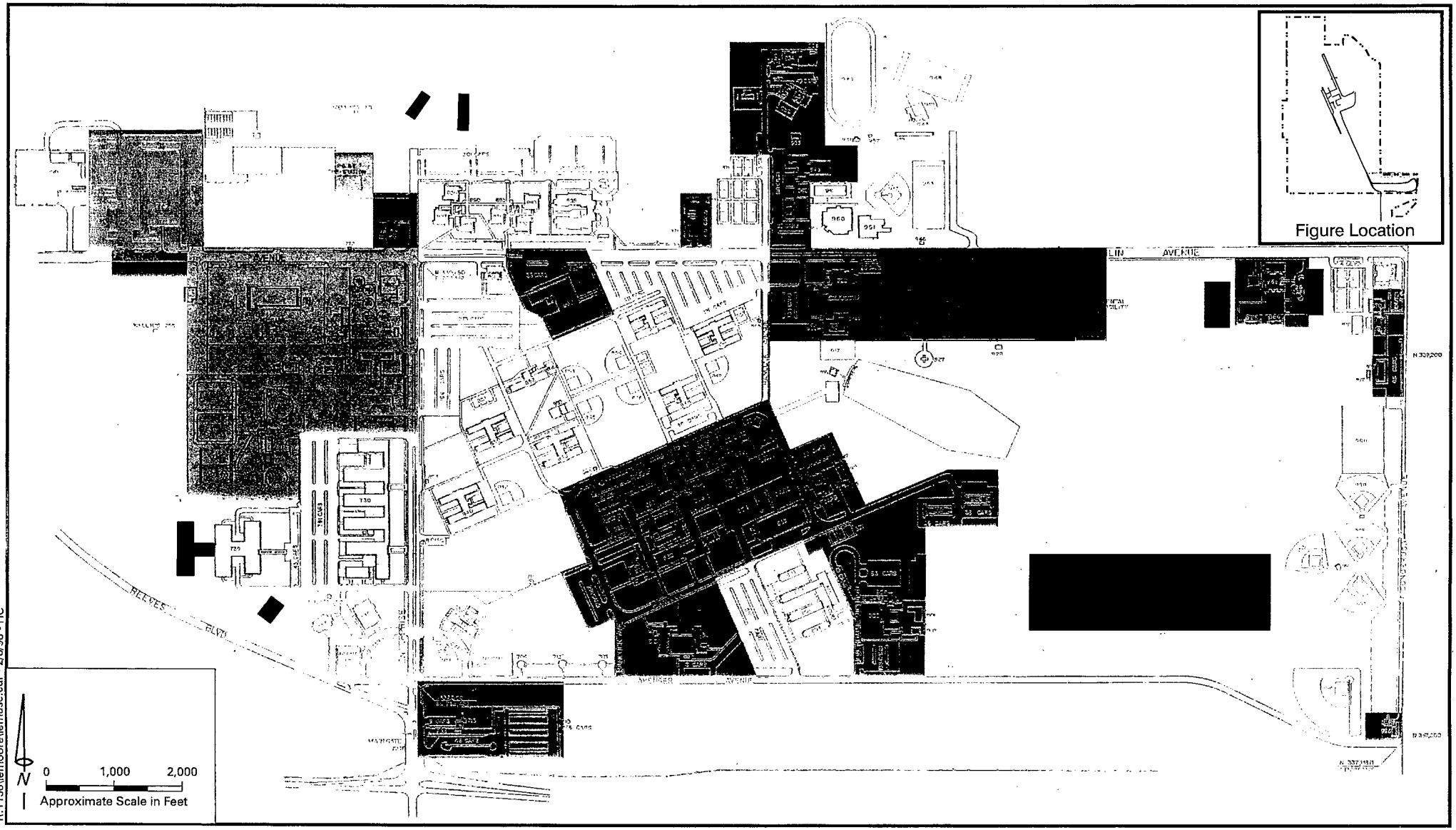
- Administration
- Maintenance
- Medical
- Open Space/Agriculture
- Personnel Support
- Public Works
- Supply
- Training/Operations
- Construction/Expansion Projects

NAS Lemoore On-Base Land Uses: Operations Area

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: US Navy 1992.

Figure 3-6



3-16

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Land use areas identified in the Master Plan are indicative of existing land uses.

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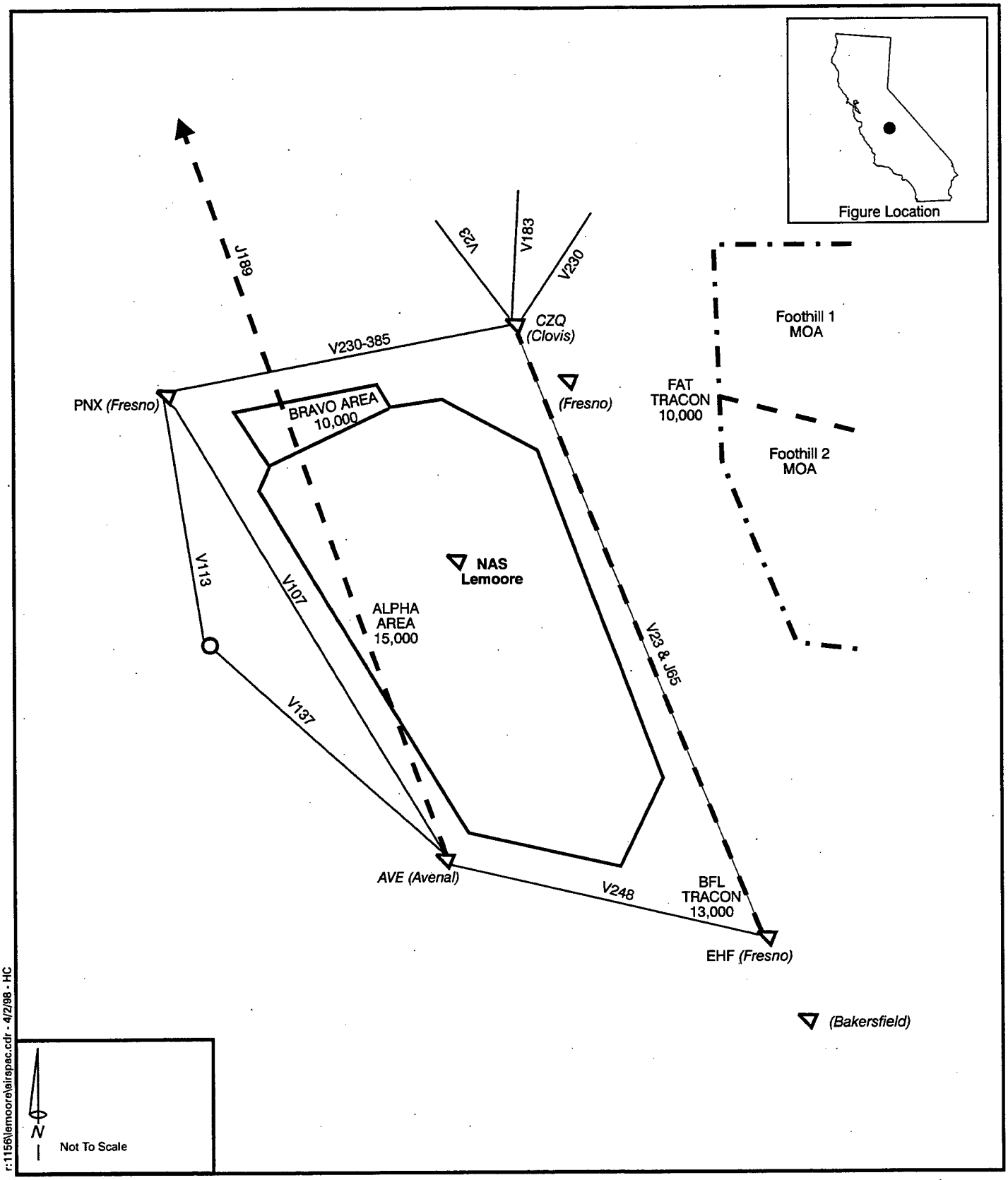
- Administration
- BOQ/BEQ/Family Housing
- Medical
- Personnel Support
- Public Works
- Recreation
- Supply
- Training/Operations
- Construction/Expansion Projects

NAS Lemoore On-Base Land Uses: Administration Area

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: US Navy 1992.

Figure 3-7



There is no dedicated military airspace above NAS Lemoore.

LEGEND:

- NLC TRACON (NAS Lemoore Control)
- Military Operations Area (MOA)
- 18,000 feet MSL and above
- 17,999 feet MSL and below
- J Jet
- V Victor

Source: US Navy 1994d.

NAS Lemoore Airspace Use

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Figure 3-8

federal airways in the area. Commercial jet corridors connecting northwestern and southern California are some of the busiest flight corridors in the country. Local carriers to Bakersfield and Fresno routinely descend through the NAS Lemoore RATCF (US Navy 1994d).

In order to reach the R-2508 Complex, aircraft from NAS Lemoore must fly east over the Sierra, along flight routes between NAS Lemoore and fixed navigation points at the boundary of R-2508 (figures 3-2 and 3-3). Navy aircraft typically enter the R-2508 Complex at one of two fix points (Kiote or Swoop) and exit the R-2508 Complex to return to NAS Lemoore from the other fix point. A third fix point (Mitel) located north of the Kiote fix point is used primarily by the Fresno Air National Guard. In addition, a fourth fix point (Fangg), near the northwestern corner of R-2508, has been proposed by the Navy, R-2508 CCB, and Fresno Air National Guard, and approval is currently pending. The Fangg fix point is proposed primarily to limit interference between aircraft entering R-2508 at Mitel and Kiote and aircraft operating within R-2508. If approved, the Fangg fix point would be used by aircraft from both NAS Lemoore and the Fresno Air National Guard.

Navy aircraft transit the routes to R-2508 at altitudes of 19,000 to 23,000 feet (5,791 to 7,010 m) msl under positive FAA control by Oakland ARTCC and are visible to FAA radar. Once inside the R-2508 Airspace Complex, aircraft are under the control of the High Desert Terminal Radar Approach Control (TRACON) and are subject to the established policies of the R-2508 JPPB.

These east-bound transit routes cross over the western Sierra side of the Sequoia and Kings Canyon national parks. OPNAV 3710.7Q requires that Navy aircraft maintain at least 3,000 feet (914 m) msl AGL over the portion of these national parks not within R-2508. The highest point along the centerline of the Kiote route is approximately 5,200 feet (1,585 m) below the 19,000-foot (5,791 m) msl flight level. The highest point beneath the Swoop transit route is approximately 6,100 feet (1,859 m) below the aircraft flight level. Given that Navy aircraft are at an average of 20,000 feet (6,096 m) msl while traveling along these routes, the separation between aircraft and ground averages approximately 8,000 feet (2,438 m) in the Sierra foothill area of these two parks.

Overflight of the Sierra at higher altitudes is not possible due to conflicts with commercial air traffic. In September 1997, the FAA denied a Navy request to raise the flight altitude along this route from between 19,000 and 23,000 feet (5,791 and 7,010 m) msl, to between 23,000 and 27,000 feet (7,010 and 8,230 m) msl. (See sections 3.7 and 4.7, Noise, and Appendix F for discussion of aircraft noise along these routes.)

Once the aircraft cross the crest of the Sierra they enter the R-2508 Complex and are mostly over national forest land. Upon entering the R-2508 Complex, aircrew training may begin and the High Desert TRACON may assign aircraft to climb to

specific altitudes or to drop to altitudes of less that 3,000 feet (914 m) AGL. As discussed previously, once aircraft enter R-2508 they are subject to the flight restrictions of the R-2508 Complex which require that aircraft shall maintain a minimum altitude of 3,000 feet (914 m) AGL and 3,000 feet (914 m) lateral distance from Sequoia and Kings Canyon National Parks, the portion of the John Muir Wilderness Area within the boundaries of Sequoia and Kings Canyon national parks, and the 1977 boundaries of Death Valley National Monument and the Domeland Wilderness Area (US Navy 1997o).

In 1997, there were approximately 50,550 flights that transited the national parks of the Sierra within R-2508. Of those, aircraft from NAS Lemoore accounted for 9,900 flights, commercial aircraft accounted for 38,207 flights, and the Fresno Air National Guard accounted for 2,443 flights. Commercial flights generally operate at altitudes of 29,000 feet (8,839 m) msl or higher. Military flights use flight plans at or above 19,000 feet (5,791 m) msl.

Regional APZs, Noise Contours, and Imaginary Surfaces

APZ, noise, and imaginary surface restrictions are established in the 1993 NAS Lemoore AICUZ. The APZ boundaries and the extent of the outer horizontal imaginary surface are shown on Figure 3-9. Figure 3-10 shows noise contours in the immediate area. Agriculture, the predominant surrounding land use, is allowable within the clear zone and in areas where noise levels are above 85 decibels (dB) (US Navy 1993b). The western portion of the city of Lemoore is below the outer horizontal imaginary surface.

On-base APZs, Noise Contours, and Imaginary Surfaces

There are two underground fuel storage tanks in APZ I. These tanks have been constructed to make them compatible with APZ requirements (US Navy 1993b).

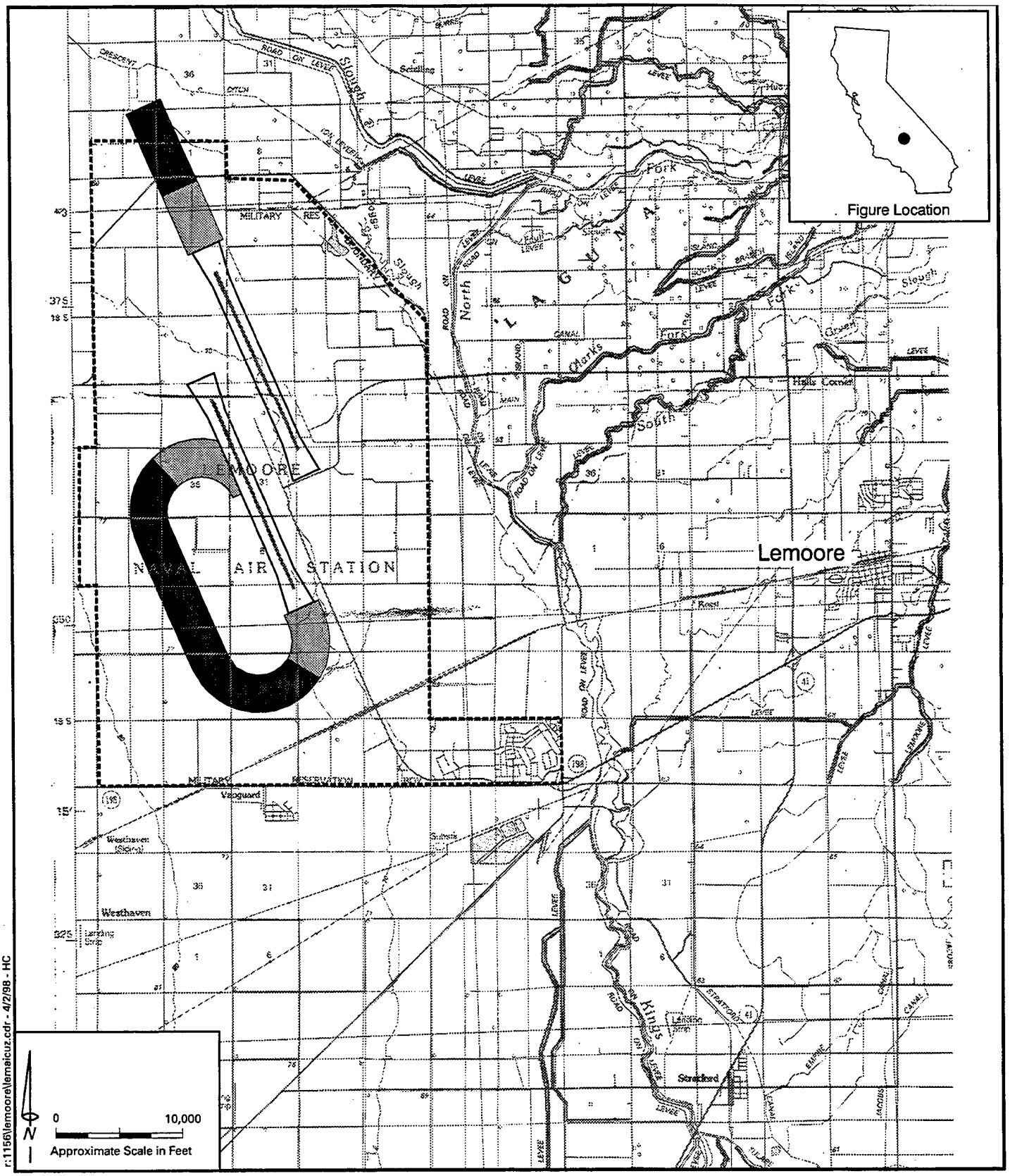
On-base land uses at NAS Lemoore are compatible with the AICUZ noise restrictions, except for some residential uses within the 65-dB CNEL noise contour and some administration offices within the 70-dB CNEL noise contour (Figure 3-10). The NAS Lemoore AICUZ recommends insulating buildings to attenuate noise impacts.

There are a number of imaginary surfaces associated with NAS Lemoore that restrict or limit structure height for safety purposes. There are currently no violations of imaginary surface restrictions at NAS Lemoore other than those necessary for air navigation (US Navy 1993b).

3.1.2 NAF El Centro Alternative

Affected Area

The affected area for land use includes the base and immediately surrounding area. The affected area for airspace use includes any military airspace associated with the



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The city of Lemoore is outside the APZ and imaginary surfaces.

LEGEND:

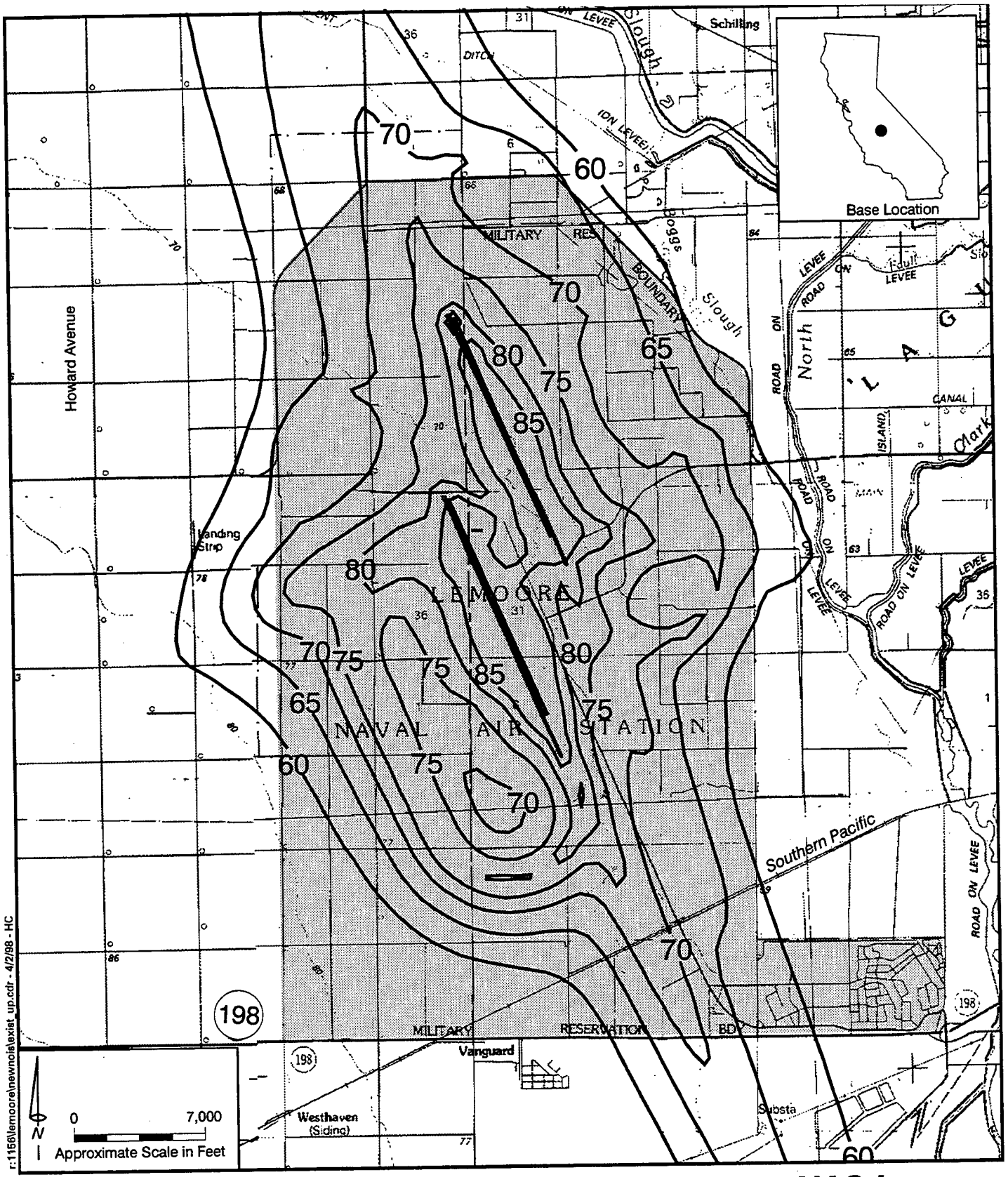
- Clear Zone
- Accident Potential Zone I
- Accident Potential Zone II
- NAS Lemoore

NAS Lemoore Existing Accident Potential Zones

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: Wyle 1997

Figure 3-9



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The 65-dB CNEL contour extends off base along major approach and departure flight paths.

LEGEND:

—75— Community Noise Equivalent Level (CNEL) in decibels (dB)

NAS Lemoore

NAS Lemoore
Existing Noise Contours

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Figure 3-10

Source: Wyle 1997.

base, land uses below imaginary surface restrictions and land uses beneath other affected airspace. Imaginary surface restrictions associated with airbase aircraft operations can extend up to 10 miles (16 km) from the base's airfield.

Setting

NAF El Centro is composed of 2,640 acres (942 ha) and is in the southeastern part of California in Imperial County. The Navy holds most of the acreage in fee simple title with a portion granted in easements. Also, a portion of the base is leased for agricultural use. The base is approximately 120 miles (193 km) east of San Diego and 65 miles (93 km) west of Yuma, Arizona. The closest population centers are the cities of El Centro, 7 miles (11 km) to the southeast, Imperial, 6 miles (9 km) to the east, and Seeley, 1 mile (1.6 km) to the south (US Navy 1990a). The naval air facility is 12 miles (19 km) from the Mexican border.

Regional Land Uses

NAF El Centro is primarily surrounded by unincorporated land in Imperial County. Regional land uses surrounding the base are almost entirely agricultural, as shown on Figure 3-11, and are zoned as general agriculture by Imperial County. Residential units in the vicinity are primarily rural farmhouses, and the closest residential community is the town of Seeley, about 1 mile (1.6 km) to the south. The Imperial County Airport is approximately 5 miles (8 km) east of NAF El Centro.

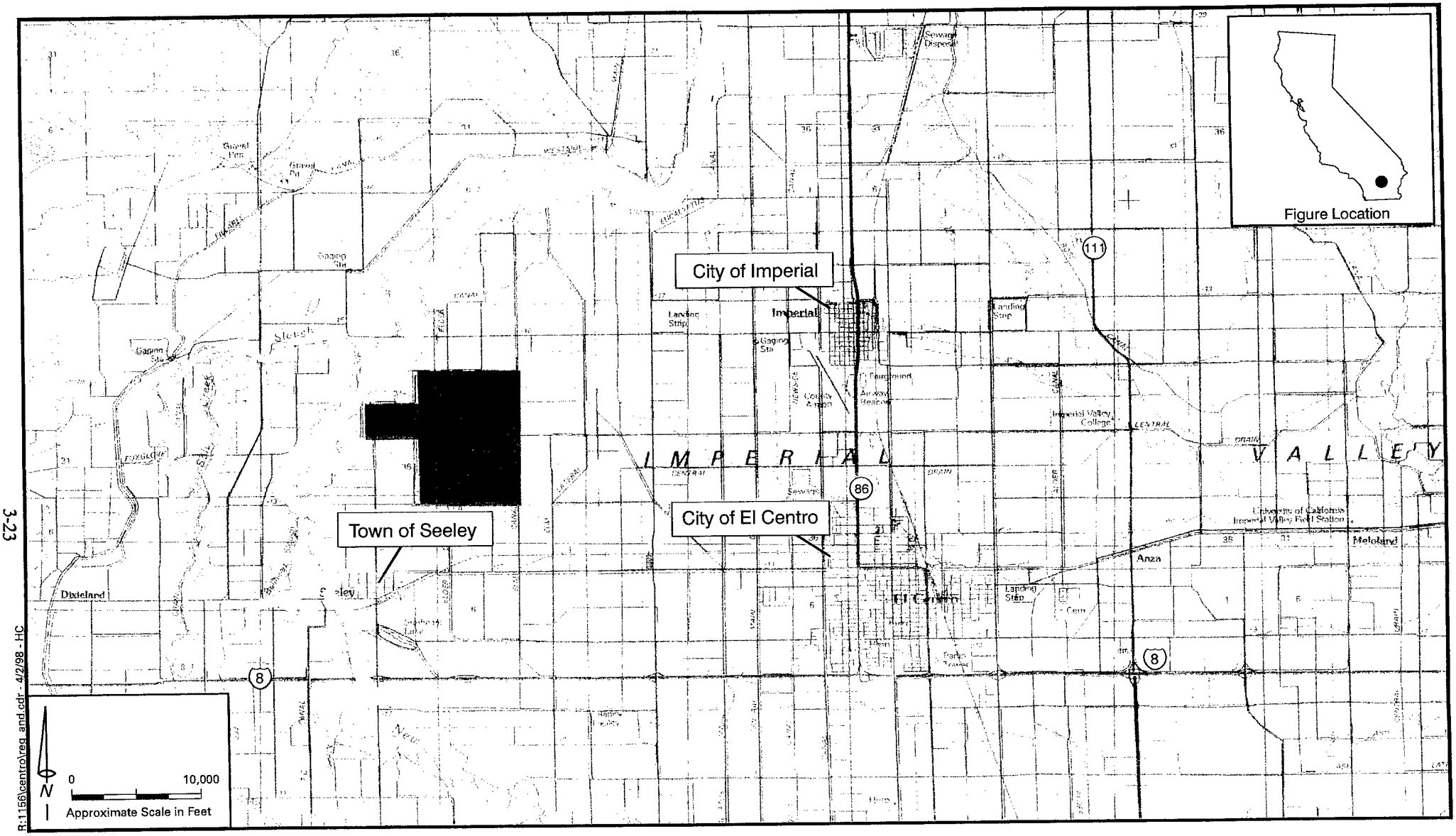
On-base Land Uses

Training/operations uses make up the major land use area at NAF El Centro. Other developed areas border the training/operations area to the south, while open space is to the west, north, and east. Other land uses supporting aircraft and training activities at the base include on-base housing, medical facilities, maintenance, and public works facilities. Personnel support uses, such as the commissary and gymnasium, along with recreation areas, are close to the housing facilities. A portion of the base is leased under an agricultural outlease program, which allows for growing commercial crops (US Navy 1990a). Existing land uses and the proposed location of F/A-18E/F facilities are shown on Figure 3-12.

The landing field at NAF El Centro consists of runways 8/26 and 12/30. Runway 8/26 is 9,500 feet (2,896 m) long, and Runway 12/30 is 6,823 feet (2,080 m) long. Runway 8/26 is the primary runway and is used for most takeoffs and landings, and Runway 12/30 is the secondary runway. Helicopters use half of closed runway 3/21 (converted to a helipad), while the CALA uses the other half (Sewester 1997).

Airspace Designations

The NAF El Centro airfield is within the control area boundary of the Los Angeles ARTCC. When restricted airspace, MOAs, or MTRs are in use, the FAA transfers control of this airspace to the military. When not in use, the Los Angeles ARTCC has jurisdiction over flights in the area (US Navy 1990b).



Most land around NAF El Centro is used for agriculture.

LEGEND:

- City/Town
- Military (Navy Property)
- Open Space/Agriculture
- Recreation

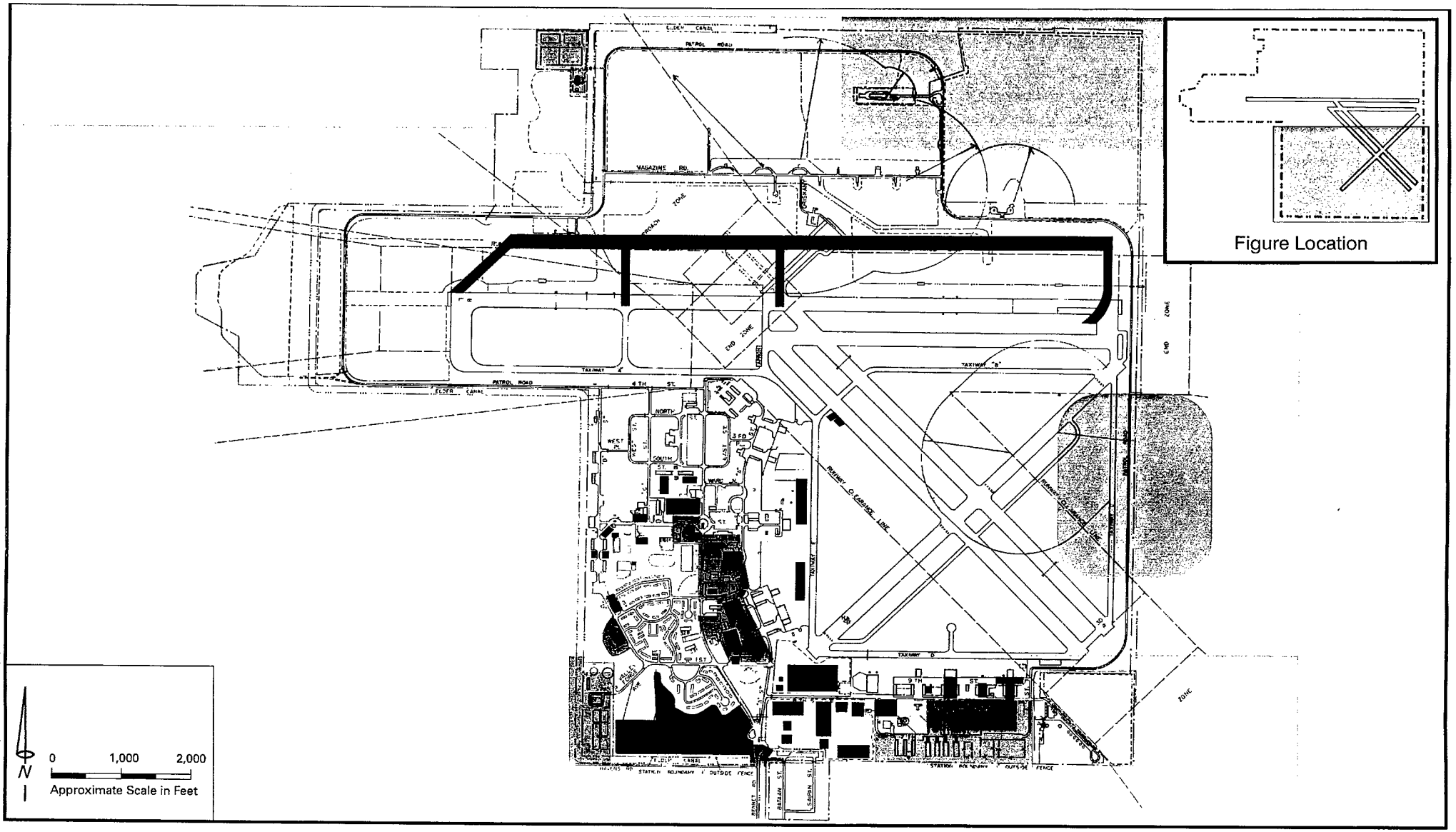
Source: US Navy 1988a.

NAF El Centro Regional Land Uses

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Figure 3-11

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Land use areas identified in the Master Plan are indicative of existing land uses.

LEGEND:

- Administration
- BOQ/BEQ/Family Housing
- Maintenance
- Medical
- Open Space/Agriculture
- Ordnance
- Personnel Support
- Public Works
- Recreation
- Supply
- Training/Operations
- Construction/Expansion Projects

Source: US Navy 1990a.

NAF El Centro
On-Base Land Uses

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Figure 3-12

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Figure 3-13 shows the airspace environment surrounding NAF El Centro. Nearby restricted areas include R-2510, which is in the Kane MOA, and R-2512, R-2507N, and R-207S, which are in the Abel MOA. Federal airways in the area provide access to San Diego, Los Angeles, and Yuma. There are several MTRs in the airspace above NAF El Centro (US Navy 1990b).

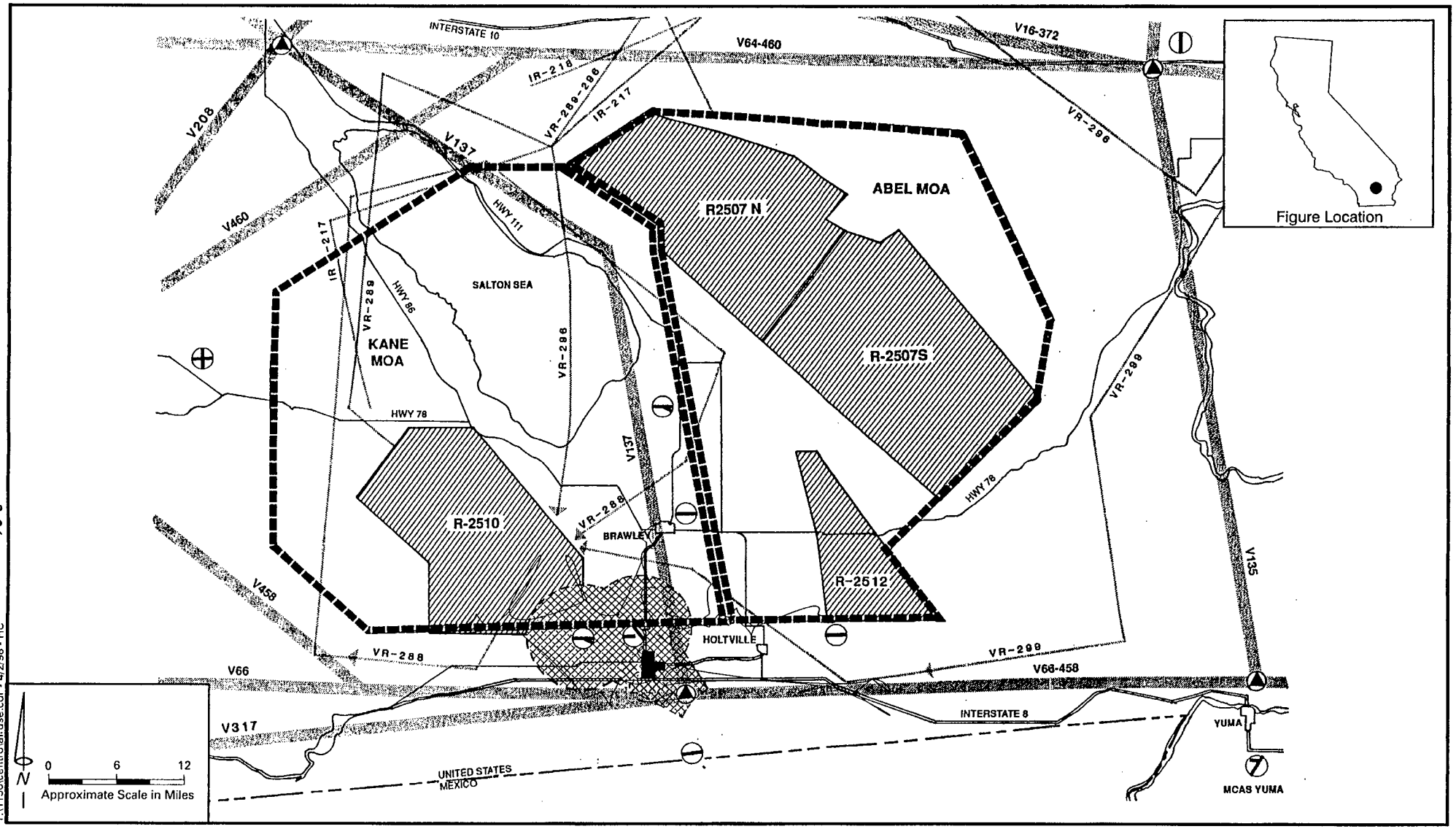
Aircraft stationed at NAF El Centro would also use the R-2508 Airspace Complex. In order to reach the R-2508 Complex, aircraft from NAF El Centro would fly under positive control of the FAA until entering R-2508 when they are under the control of the High Desert TRACON. These aircraft fly at altitudes of 19,000 feet to 23,000 feet (5,791 to 7,010 m) msl as they transit between NAF El Centro and R-2508. Flights from NAF El Centro would not pass over or affect any sensitive resource areas, such as national parks or wilderness areas. Since no squadrons are deployed at NAF El Centro, the R-2508 Airspace Complex and MTRs are used only by attachments temporarily stationed at NAF El Centro. Use of these training areas is therefore intermittent.

An airport control zone is normally a 5-mile (8-km) radius circle centered on the airport. However, because the airfields at NAF El Centro and Imperial County Airport are 5 miles (8 km) apart, their control zones overlap. A history of cooperation and coordination between the two airports has resulted in well-defined airspace boundaries and control procedures to make the best of the overlapping airport control zones (US Navy 1990b).

Figure 3-14 shows the airport traffic pattern interface between NAF El Centro and Imperial County Airport. Imperial County Runway 8/26 is on the same alignment as NAF El Centro Runway 8/26. Along with the overlapping control zones, operation of these runways requires special procedures for approaches and departures. An arbitrary low-altitude airport traffic boundary line has been established midway between NAF El Centro and the Imperial County Airport. Pilots of military aircraft who approach NAF El Centro Runway 8/26 from the north must hold their altitude above 3,000 feet (914 m) over the Imperial County Airport and then descend rapidly to 1,500 feet (457 m) to enter the circling approach (US Navy 1990b).

The airport traffic boundary line also requires the Navy to shorten its standard FCLP pattern at the east approach to Runway 8/26. Normally the FCLP pattern would be lengthened on the runway approach if several aircraft were flying the pattern. Instead, the FCLP pattern is lengthened on the Runway 8/26 departure end to comply with the airport traffic boundary line (US Navy 1990b).

Additionally, civilian aircraft that depart from Imperial County Airport must avoid flying into the NAF El Centro airport control zone. NAF El Centro has agreed to provide advisory service, to the extent possible, for Imperial County Airport traffic. The FAA has recommended the following flight safety procedures at the Imperial County Airport to reduce the risk to aircraft safety:



NAF El Centro is located in an airport control zone near areas of restricted airspace.

LEGEND:

- Federal Airway
- Military Training Routes
- Military Operations Area
- Airport Control Zones
- Airport Location (Runway orientation in dark line)
- Radio Aid to Navigation
- Restricted Airspace
- NAF El Centro

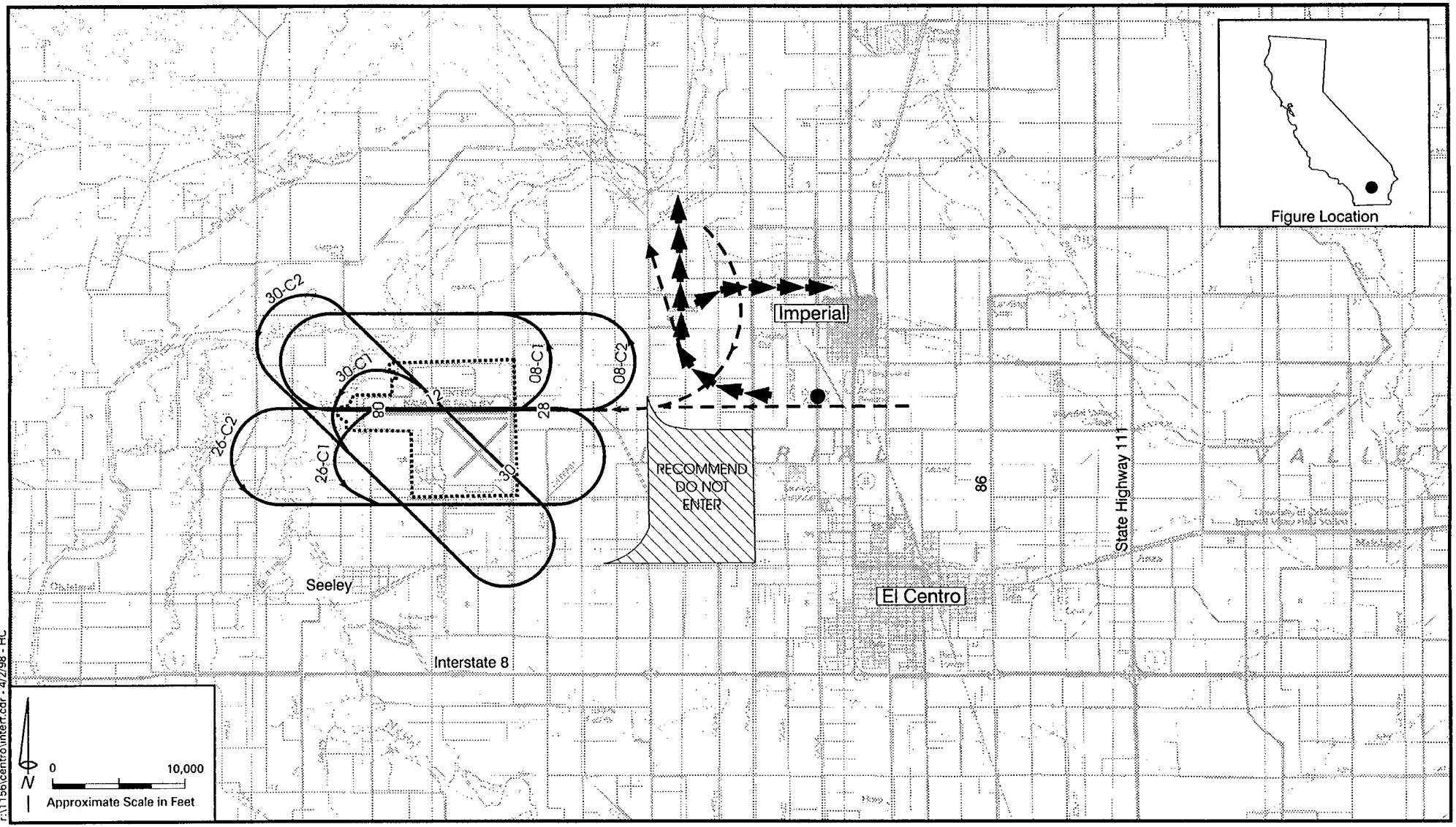
NAF El Centro Airspace Use

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: US Navy 1988a; 1990b.

Figure 3-13

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Coordination between NAF El Centro and the Imperial County airport is necessary during flight operations.

LEGEND:

- NAF El Centro Low Altitude Flight Track
- NAF El Centro High Altitude Flight Track
- 26-C1 NAF El Centro Flight Track Number
- Low Altitude Clearance Area
- NAF El Centro Low Altitude Flight Track
- Imperial County Airport Minimum Departure Heading - 310 Degrees
- NAF El Centro Boundary
- Imperial County Airport

Source: US Navy 1988a; 1990b.

NAF El Centro and Imperial County Airport Traffic Interface

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Figure 3-14

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- Traffic patterns for Runway 26 should be established as right-hand traffic, traffic patterns for Runway 8 should be established as left-hand traffic, and traffic pattern altitude should be established at 800 feet (244 m) for both patterns.
- Departure procedures for Runway 26 should be established restricting all turns to be right turns only after takeoff. All aircraft departing Runway 26 should be required to fly a minimum heading of 310 degrees after takeoff. A traffic pattern indicator should be installed indicating right traffic for Runway 26.
- The Imperial County Airport manager should conduct pilot briefings for fixed-base operators and should provide briefing sheets for all pilots using Imperial County Airport. The briefing should explain in detail the procedures to be used for Runway 8/26.
- All special operating procedures should be published in the Airport Facility Directory. Signs should be erected in conspicuous places on Imperial County Airport grounds advising pilots of the location of NAF El Centro and that special procedures are recommended (US Navy 1990b).

Regional APZs, Noise Contours, and Imaginary Surfaces

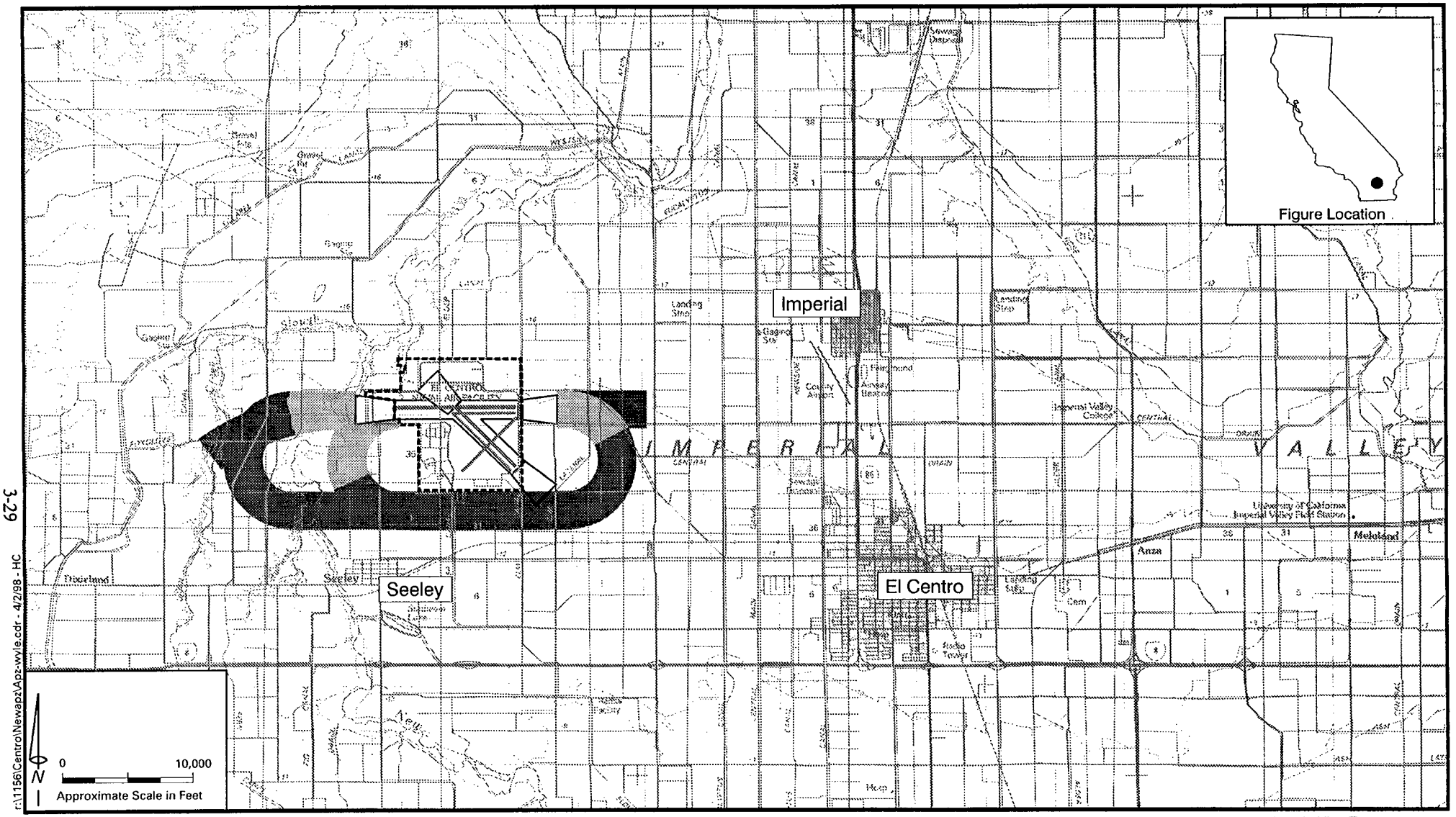
APZ, noise, and imaginary surface restrictions are established in the 1990 El Centro AICUZ. APZ boundaries and imaginary surfaces are shown on Figure 3-15. Figure 3-16 shows noise contours in the vicinity of NAF El Centro. Regional land uses within APZs or high noise levels are predominantly agriculture and recreation, both of which are allowable uses. The town of Seeley and a portion of the city of Imperial are located within the 65-dB CNEL.

Currently, no off-base structures are known to penetrate the imaginary surfaces; however, the Imperial County Airport is under the approach-departure clearance surface, and portions of the cities of Imperial and El Centro are below the approach-departure clearance surface or the outer horizontal imaginary surface. The community of Seeley is below the conical surface (US Navy 1990b).

On-base APZs, Noise Contours, and Imaginary Surfaces

There is some housing on the inner edge of APZ II. Most of NAF El Centro is within the 80- to 85-dB CNEL noise contour (Figure 3-16). Land uses not compatible with these noise levels include the medical and dental clinic, administration facilities, housing, and personnel support facilities. Because relocating these facilities would be impractical, the NAF El Centro AICUZ recommends insulating the buildings to attenuate noise impacts (US Navy 1990b).

NAF El Centro has imaginary surfaces for helicopters that are different from those associated with planes (Figure 3-17) (US Navy 1988a). Currently no structures, other than those necessary for safe aircraft operation, violate imaginary surface restrictions (US Navy 1990b).



El Centro and Imperial are outside NAF El Centro's APZ and imaginary surfaces.

LEGEND:

- Clear Zone and Setback
- Accident Potential Zone I
- Accident Potential Zone II
- NAF El Centro Boundary

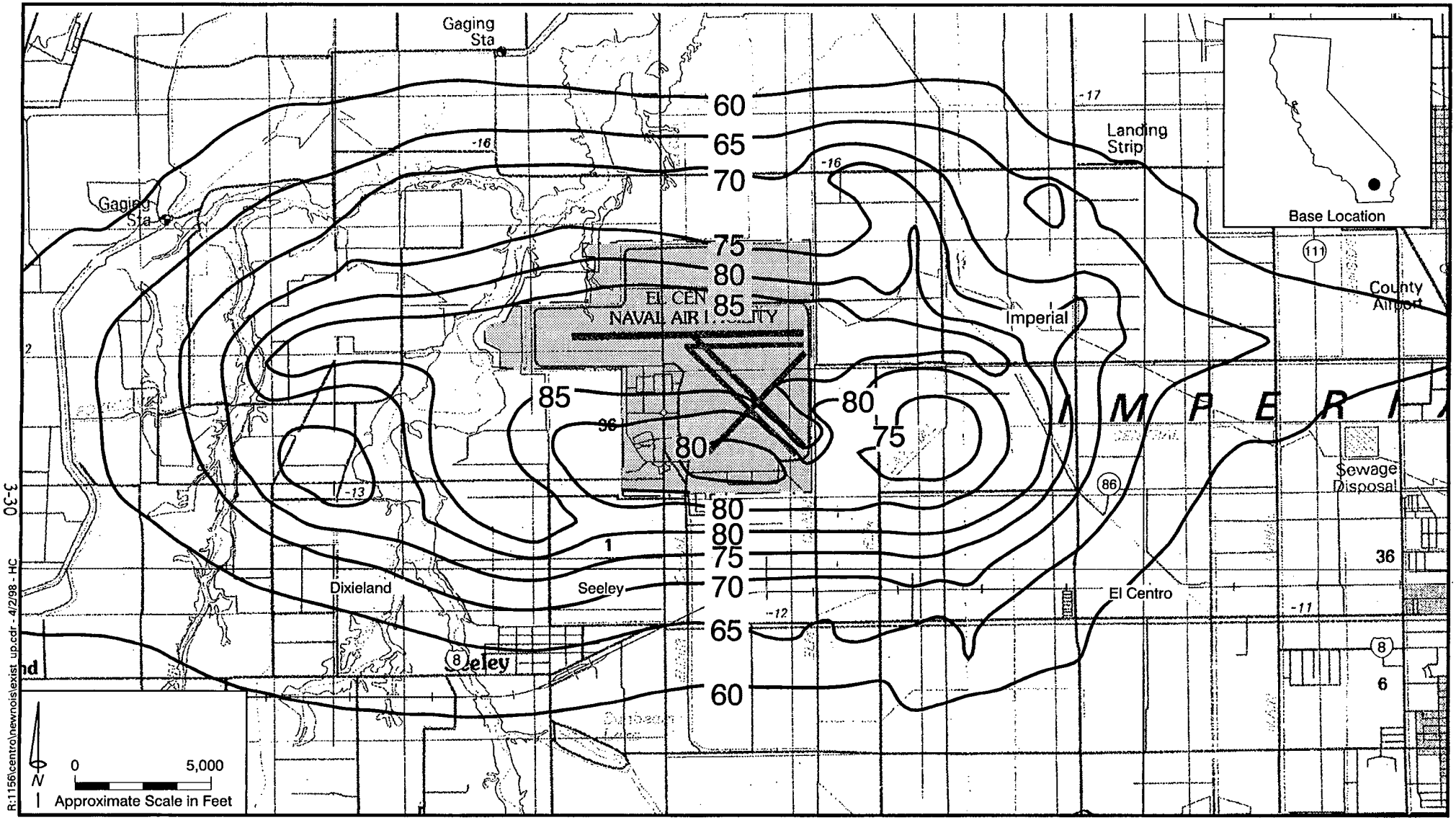
NAF El Centro
Existing Accident Potential Zones

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: Wyle 1997

Figure 3-15

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3-30

On-base noise contours are between 80-dB and 85-dB CNEL.

LEGEND:

— 75 — Community Noise Equivalent Level (CNEL) in decibels (dB)

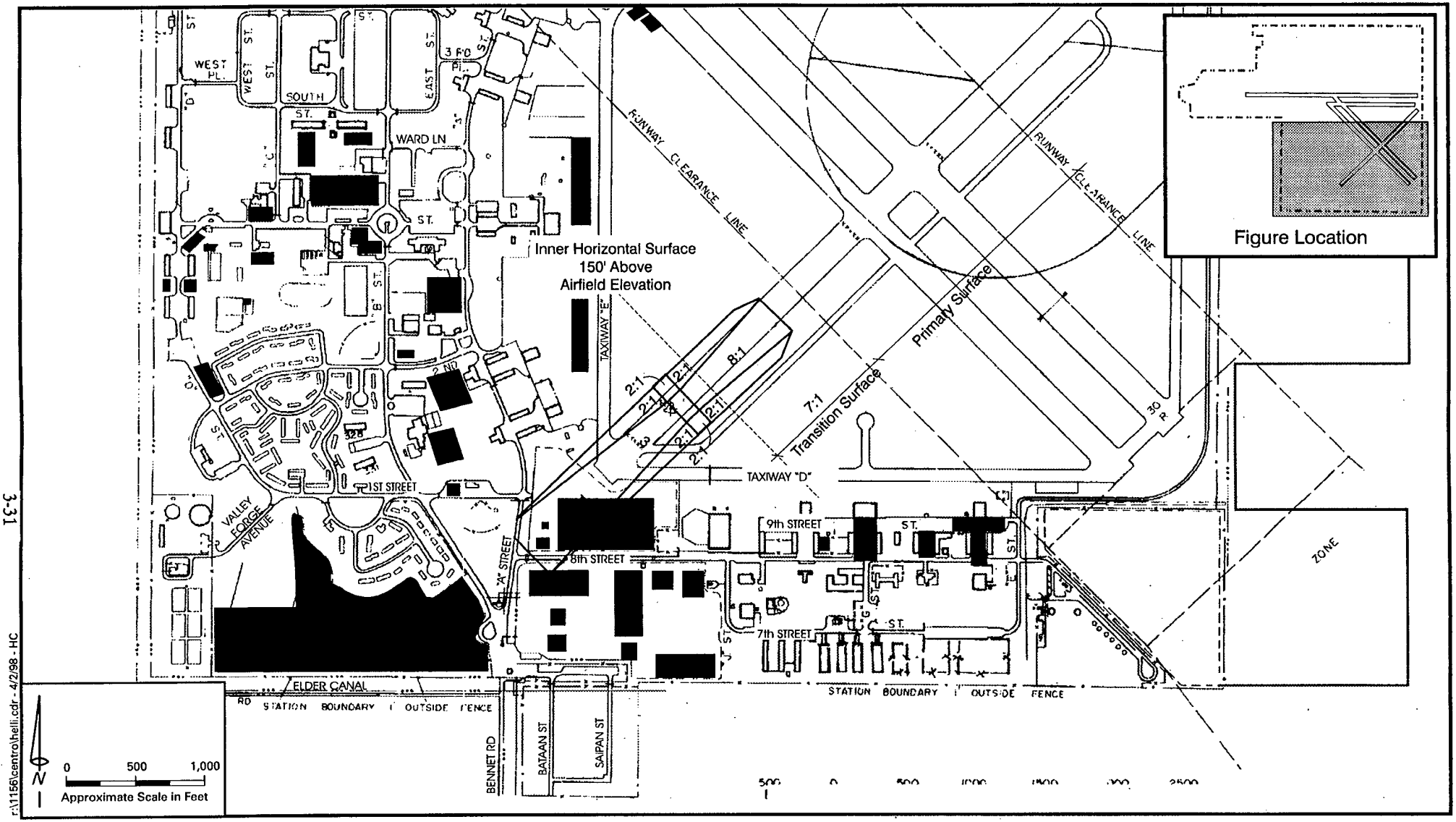
NAF El Centro

NAF El Centro
Existing Noise Contours

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: Wyle 1997

Figure 3-16



3-31

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The imaginary helicopter surface occupies an area proposed for future construction.

LEGEND:

Construction/Expansion Projects

NAF El Centro
Imaginary Helicopter Surface

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: US Navy 1990b.

Figure 3-17

3.2 VISUAL RESOURCES

Definition of Resource

Visual resources are defined as the natural and engineered features that constitute aesthetic qualities and values of an area. These features contribute to the overall impression that an observer receives when viewing an area. Landforms, water surfaces, vegetation, and structures are considered distinctive elements of an area's visual character.

The visual importance or sensitivity associated with the visual resources of an area determine whether a change in character would be considered a significant effect. Visual sensitivity is determined by the overall visual character and quality of an area, the number of viewers with access to the resources, and the duration of the view.

High visual sensitivity areas with high visual quality have views that are rare, unique, or in other ways special, such as in remote or pristine environments or in areas of historic significance with unique architecture. High-sensitivity views would include landscapes that consist of structures, landforms, vegetative patterns, water bodies, or rock formations of unusual or outstanding quality. High visual sensitivity localities also would include natural coastlines, streams, river corridors, designated historic districts, and designated scenic vistas.

Medium visual sensitivity areas with moderate visual quality are more developed than those areas of high sensitivity. Human influence is more apparent in these areas, and the presence of motorized vehicles and other evidence of modern civilization are common. These landscapes generally have built and natural features containing varieties in form, line, color, and texture but tending to be more common than high visual sensitivity areas.

Low visual sensitivity areas with low visual quality tend to have minimal landscape features and common building types, with little change in form, line, color, and texture. Low sensitivity views include typical urban or suburban areas, agricultural and farming areas, industrial or commercial developments, and other areas that do not contain unique or historic resources typical of medium or high visual sensitivity areas.

Observers typically are considered sensitive visual receptors when viewing perceptible changes in visual character that contrast and detract from a scenic natural or built landscape. Certain activities tend to heighten viewer awareness of scenic resources, while others tend to distract from them. For example, people who are camping, picnicking, or driving along a recognized scenic roadway are more likely to notice changes in the surrounding character than commuters traveling at high speeds on an interstate highway.

Regulatory Considerations

The Navy identifies the visual character or quality of each base in base exterior and architecture plans (BEAPs). The BEAPs for the alternative base locations contain design guidelines for all development, replacement, repair, and maintenance projects. The BEAPs recommend architectural guidelines, color palettes, furnishings, signage, and lighting that are consistent with the aesthetic values or themes of the natural and engineered environment.

The visual character of each project site was identified through observations, and visual resources were documented in the BEAPs and master plans for each alternative base. The BEAPs determine local regulatory considerations for each installation.

3.2.1 NAS Lemoore Alternative

Affected Area

The affected area for visual resources includes a generalized viewshed extending from each base to a maximum of 5 miles (8 km) but is limited in places by terrain and structures.

Regulatory Considerations

Design guidelines in the NAS Lemoore BEAP are implemented for future development on the base. The BEAP recommends implementing a coordinated color scheme for new building exteriors using natural colors that complement the surrounding desert landscape, such as shades of red, brown, and gray, and planting trees to provide an overall sense of order, structure, and direction for the base (US Navy 1989).

Visual Character

The topography at NAS Lemoore is relatively flat with no visual relief. On-base elevations range from a low of 210 feet (64 m) above msl at the southwest corner of the base to 265 feet (81 m) above msl in the northeast/southeast corners. NAS Lemoore is in a region of the San Joaquin Valley dominated by agriculture and maintains extensive fields in active cultivation. The operations area at NAS Lemoore is separated from the administration and housing complex by nearly 5 miles (8.1 km). The lands between the operations and administration areas are agricultural outleases planted with row crops, particularly cotton. These two areas are visually distinct from one another but are surrounded by similar landscapes. The operations area is industrial in appearance due to the presence of hangar complexes, training facilities, maintenance areas, and other support structures. The southerly administrative area is suburban in character, with landscaped areas, smaller structures, and a variety of recreational amenities and housing facilities. Planted trees serve as windbreaks in landscaped portions of NAS Lemoore. Dominant visual elements include base structures, such as aircraft hangars, the control tower, housing structures, offices, and other buildings.

Existing Views

Short- and long-range views from the base include agriculture and the foothills of the Coast Range to the west and the Sierra Nevada mountains to the north and east. No scenic highways, national parks, or state parks are near the base. The closest public views of on-base functions and structures are from SR-198 along the southern edge of the base. Due to the limited topographic relief, off-base views are restricted to the control tower, taller buildings, and perimeter structures. The base facilities cannot be seen from Interstate 5, which is over 20 miles (32.2 km) to the west. From the main gate, the landscaped entryway, flag circle, and administration buildings are visible. Perimeter landscaping along the highway conceals much of the housing and recreation areas from freeway view.

3.2.2 NAF El Centro Alternative

Affected Area

The affected area for visual resources includes a generalized viewshed extending from the base to a maximum of 5 miles (8 km) but is limited in places by terrain and structures.

Regulatory Considerations

The BEAP theme at NAF El Centro is "rural desert." The design guidelines recommend color palettes, furnishings, signage, and lighting consistent with the theme established for each on-base district (US Navy 1988b).

Visual Character

The topography at NAF El Centro is flat with no visual relief. Elevations vary from 52 feet (15.8 m) to 42 feet (12.8 m) below msl. The area surrounding the base is under cultivation by farmers to whom the land is leased by NAF El Centro. The agricultural production areas feature low-lying herbaceous growth and regularly spaced open irrigation channels.

Existing Views

Short-range views from the base are of the agriculturally dominated landscape. Long-range views from the base include the eastern slopes of the Peninsular Range to the west, the Chocolate Mountains to the northeast, and Mount Signal to the south, near the international border. There are no scenic highways near NAF El Centro. Generally, the operational functions are in the southeastern corner of the base, and family housing is in the southwestern corner. Administrative, recreational, and personnel support facilities are directly north of family housing. The closest point from which public views of on-base functions and structures are available is the main gate on Bennett Drive at the southern edge of the base. From this gate, views are limited to the landscaped entry and perimeter buildings, including hangars and engineering support buildings. The central parachute tower is visible from longer distances because of its height and limited topographic relief.

3.3 SOCIOECONOMICS

This section describes recent socioeconomic trends in the region surrounding the two alternative bases. To ensure data comparability between the two bases, the same sources of data were used when available.

Definition of Resource

Socioeconomics includes data on population, employment, income, housing, business volume, net government revenues, schools, and recreation and community facilities. Population includes the number of residents in the area and the recent change in population growth. Employment data includes labor sectors, labor force, and statistics on unemployment. Income information is provided as an annual total by county and as per capita income. Housing includes numbers of multifamily units, single-family homes, and mobile homes and their vacancy rate. Business volume is defined as local business activity or sales and is the sum of retail and wholesale trade sales, service receipts, and value added by manufacturing. Government revenues are total financing sources. School enrollment and capacity, along with recreation and community facilities, include facilities in the project area that could be affected by the proposed action.

Regulatory Considerations

Schools. California legislation, passed in July 1996, provides schools with incentive funding to reduce class size (thereby increasing the number of classrooms and teachers) in the primary grades. Each participating school must reduce class size to 20 students or less, first in grade one, then in grade two, and then in either kindergarten or grade three, at a school's discretion. By law the program is an ongoing part of participating districts' revenues and is part of a larger effort to improve instruction and student performance (Education Data Partnership 1997). The Improving America's Schools Act of 1994 mandates the US Department of Education to appropriate funds to schools attended by military family members. This funding can be applied for by local school districts on a per-child basis. Once received, these funds can be used at the district's discretion for supplementing operating costs or facilitating construction projects.

Under Section 8003 of this act, school districts receive funding for students whose parents work and live on federal property and for students whose parents are in the uniformed service and live off-base. School districts, however, may not receive funding or the funding may be at a reduced amount for civilian students whose parents work at federal facilities but who reside off-base. The exact funding amounts and subsequent impacts of the new legislation are uncertain.

Section 8006 of the act allows additional federal funding for schools that experience a sudden and substantial increase in attendance of military family members. A school district can qualify for this funding if the number of incoming military children is at least 10 percent or 100 more than the number of children in average daily attendance of the preceding school year.

Some school districts also receive DOD funding under Title II of Public Law 102-368 and Section 386 of Public Law 102-484 (DOD Authorization Bill). For a school district to receive this funding, its enrollment must be 30 percent military family members. The Department of Education supplies federal funds to the school board based on the number of students whose parents work and live on federal property (US Navy 1994d).

3.3.1 NAS Lemoore Alternative

Affected Area

The affected area for NAS Lemoore includes Kings and Fresno counties. The affected area was selected based on the assumption that most base personnel commute to work from and spend dollars in one or both of the two counties.

Kings County is surrounded by Fresno County to the north and west, Tulare County to the east, Kern County to the south, and Monterey County to the west. Four incorporated cities, Avenal, Corcoran, Hanford (the county seat), and Lemoore, are in Kings County (Crown Economic Development Corporation 1997).

Fresno County is surrounded by Kings County and Tulare County to the south, Madera County, Mono County, and Merced County to the north, San Benito County and Monterey County to the west, and Inyo County to the east. The 12 incorporated cities in Fresno County are Clovis, Coalinga, Firebaugh, Fowler, Fresno (the county seat), Huron, Kerman, Kingsburg, Mendota, Reedley, Sanger, and Selma (Fresno County 1997).

Population

The population in the affected area totaled approximately 839,800 in 1994, representing an increase of 8.5 percent from the 1990 population (Table 3-2). Each county had similar population growth rates—Kings County was 8.2 percent and Fresno County was 8.6 percent. In 1994, the population density was 79 persons per square mile (205 persons per km^2) in Kings County and 122 persons per square mile (316 persons per km^2) in Fresno County.

Table 3-2
Population (1,000s), Kings and Fresno Counties

	Kings County	Fresno County	Total
1990	101.8	671.9	773.7
1992	106.8	706.0	812.8
1994	110.1	729.7	839.8
Change 1990 to 1994 (percent)	8.2	8.6	8.5

Sources: US Bureau of Economic Analysis 1996a, 1996b, 1996e, 1996f.

Employment

Between 1990 and 1994, total employment in Kings and Fresno counties increased by 4.8 percent (Table 3-3). The greatest increase at 30.9 percent was in the agricultural services sector; however, this was offset by decreases in mining (22.5 percent) and construction (10.5 percent). Military employment decreased 4.5 percent in Kings and Fresno counties from 1990 to 1994.

Table 3-3
Sector Employment, Kings and Fresno Counties

Sector	1990	1992	1994	Percent Change 1990 to 1994
Farm	**35,565**	**32,108**	**34,358**	**-3.4**
Nonfarm	**351,329**	**355,833**	**371,146**	**5.6**
Private	**284,169**	**288,360**	**300,240**	**5.7**
Agricultural Services	28,766	28,891	37,655	30.9
Mining	901	930	698	-22.5
Construction	20,454	18,285	18,311	-10.5
Manufacturing	31,156	29,500	30,428	-2.3
Transportation and Public Utilities	15,529	15,662	15,500	-0.2
Wholesale Trade	17,261	17,414	16,932	-1.9
Retail Trade	61,835	60,931	63,072	2.0
Finance, Insurance, and Real Estate	24,317	24,656	24,195	-0.5
Services	83,950	92,091	93,449	11.3
Government and Government Enterprises	**67,160**	**67,473**	**70,906**	**5.6**
Federal, Civilian	12,105	12,149	12,149	0.4
Military	7,039	6,895	6,720	-4.5
State and Local	48,016	48,429	52,037	8.4
Total	**386,894**	**387,941**	**405,504**	**4.8**

Sources: US Bureau of Economic Analysis 1996c, 1996d, 1996g, 1996h.

In 1994, the civilian labor force for Kings County totaled 42,056; 5,741 people were unemployed (13.7 percent unemployment rate). The unemployment rate was 13.7 percent for 1994, up 3.5 percent from 1990. In Fresno County, the civilian labor force equaled 366,223 in 1994, and 49,670 persons were unemployed (13.6 percent unemployment rate). The combined unemployment rate for the affected area was 13.6 percent. (See Table 3-4.)

The major employers in Kings County are Kings County schools, Corcoran State Prison, and Kings County. NAS Lemoore is the eighth largest employer in the county (Crown Economic Development Corporation 1997). Major employers in Fresno County are Fresno County, NAS Lemoore, and Fresno Unified School District (The Business Journal 1997).

Table 3-4
Labor Force and Unemployment, Kings and Fresno Counties

	Labor Force	Unemployed	Unemployment Rate (percent)
Kings County			
1990	38,176	3,882	10.2
1992	39,408	5,904	15.0
1994	42,056	5,741	13.7
Fresno County			
1990	330,999	34,447	10.4
1992	355,324	51,948	14.6
1994	366,223	49,670	13.6
Total			
1990	369,175	38,329	10.4
1992	394,732	57,852	14.7
1994	408,279	55,411	13.6

Sources: US Bureau of Labor Statistics 1996a, 1996b.

The four main sources of civilian employment at NAS Lemoore are federal civil service positions, nonfederal civil service positions, contractors and subcontractors, and McDonald's Restaurant. Approximately 780 people are employed in federal civil service at the base. Nonfederal civil service (nonappropriated funds) includes the Navy Exchange and the Department of Morale, Welfare, and Recreation. The Navy Exchange employs roughly 176 personnel, and the Department of Morale, Welfare, and Recreation employs about 136. The base McDonald's presently employs approximately 40 people. NAS Lemoore supports a workforce of 4,518 military personnel and 1,691 civilian personnel, for a total workforce of 6,209.

Income

In 1994, the per capita personal income for the affected area was $16,918, an increase of 7.7 percent over the 1990 income. In Kings County the average per capita income was $13,622 in 1994. In Fresno County, the per capita personal income was $17,406 in 1994. The average income for military personnel is $37,230, while civilian personnel at NAS Lemoore receive an average of $30,861. Table 3-5 lists the income in the affected area.

Housing

The affected area had 270,713 housing units in 1994 (Table 3-6). There were 32,966 units in Kings County and 237,747 units in Fresno County. In each county, the composition of housing units is roughly 73 percent single-family units, 21 percent multifamily units, and 5 percent mobile homes. Kings County has a slightly lower percentage of multifamily units and a higher percentage of mobile homes. The vacancy rate ranges between 4.9 percent in Fresno County and 6.1 percent in Kings County, for a combined vacancy rate of 5.1 percent in 1994.

Table 3-5
Income by Place of Residence, Kings and Fresno Counties

	Total Personal Income ($1,000s)	Per Capita Income
Kings County		
1990	$1,286,215	$12,631
1992	$1,408,748	$13,186
1994	$1,499,612	$13,622
Fresno County		
1990	$10,864,187	$16,170
1992	$11,898,823	$16,855
1994	$12,701,465	$17,406
Total		
1990	$12,150,402	$15,704
1992	$13,168,980	$16,198
1994	$14,201,077	$16,918

Sources: US Bureau of Economic Analysis 1996a, 1996b, 1996e, 1996f.

Table 3-6
Housing Stock and Vacancy Rates, Kings and Fresno Counties

	Single-family Units	Multifamily Units	Mobile Homes	Total Housing Units	Vacant	Percent Vacant
Kings County						
1990	22,506	6,314	2,023	30,843	1,761	5.7
1992	23,300	6,437	2,110	31,847	1,818	5.7
1994	24,277	6,495	2,194	32,966	2,016	6.1
Fresno County						
1990	167,412	48,865	12,201	228,478	11,180	4.9
1992	170,583	50,873	12,220	233,676	11,430	4.9
1994	173,263	52,237	12,247	237,747	11,764	4.9
Total						
1990	189,918	55,179	14,224	259,321	12,941	5.0
1992	193,883	57,310	14,330	265,523	13,248	5.0
1994	197,540	58,732	14,441	270,713	13,780	5.1

Source: California Department of Finance 1990.

Housing at NAS Lemoore is available to all pay grades. There are 1,589 family housing units, consisting of 90 officer units and 1,499 enlisted units. The waiting list varies depending on the size of the family and pay grade. Certain areas of housing are being renovated, and plans are being finalized to build new houses. The BEQ has 3,057 beds, and the BOQ has 165 rooms (SITES 1997).

Business Volume

Business volume is defined as local business activity or sales, and is the sum of retail and wholesale trade sales, service receipts, and value added by manufacturing. Business volume in Kings and Fresno counties has risen from almost $7 million in 1990 to a little over $8 million in 1994 (Table 3-7).

Table 3-7
Business Volume ($1,000s), Kings and Fresno Counties

Sector	1990	1992	1994
Manufacturing	$853,059	$852,705	$937,603
Transportation and Public Utilities	$505,107	$557,771	$576,243
Wholesale Trade	$518,452	$556,483	$562,149
Retail Trade	$1,019,866	$983,333	$1,073,880
Finance, Insurance, and Real Estate	$380,532	$481,599	$491,374
Services	$1,785,265	$2,090,256	$2,287,695
Government and Government Enterprises	$1,769,542	$1,991,525	$2,179,121
Total	**$6,831,823**	**$7,513,672**	**$8,108,065**

Sources: US Bureau of Economic Analysis 1996a, 1996b, 1996e, 1996f.

Net Government Revenues

Net government revenues are total financing sources and transfers in (less total financing uses) and transfers out. Net government revenues in Kings County (Table 3-8) have fluctuated through the past few years from a low of approximately negative $1,412,000 to a high of $1,532,000. In Fresno County, the highs and lows have been sharper—a low of negative $5,845,000 to a high of $14,973,758 in fiscal year 1990/1991.

Table 3-8
Net Government Revenues, Kings and Fresno Counties

	Fiscal Years		
	1990/1991	1992/1993	1994/1995
Kings County			
Sources	$84,955,639	$90,926,174	$98,213,648
Uses	$86,367,957	$89,394,025	$98,440,899
Net Revenues	($1,412,318)	$1,532,149	($227,251)
Fresno County			
Sources	$610,450,607	$676,938,979	$734,626,849
Uses	$595,476,849	$682,784,235	$732,131,119
Net Revenues	$14,973,758	($5,845,256)	$2,495,730

Sources: California State Controller 1993, 1995, 1997.

Schools

Kings County has 14 school districts and Fresno County has 35 school districts (California County Office of Education 1996a, 1996b). The six school districts near NAS Lemoore are grouped into Lemoore Union School District, Lemoore Union Elementary School District, Hanford Joint Union High School District, Hanford Elementary School District, Central Union School District, and Island Union School District.

Lemoore Union High School District consists of Lemoore High School and Lemoore Continuation School. High school age children residing on-base are bused to Lemoore High School (SITES 1997). The current enrollment is

approximately 1,700 students, which is near capacity. There is a project planned to increase the district capacity, but currently there is no funding for the proposed project (Mayer 1997).

Lemoore Union Elementary School District has 2,815 students enrolled.

Several portable classrooms have been added to each school site. Students from on and off the base attend schools within the district (Richwine 1997).

Hanford Joint Union High School District consists of one school with two campuses within the city of Hanford. Currently, the enrollment is approximately 2,700 students, which is 200 students over capacity. No expansion plans are in process because a recent bond measure that would have provided the district with funds to increase the number of classrooms did not pass. However, the district is considering a bond issue to be placed before the public in March 1998. This bond would allow for expanding the campus (Martinez 1997).

The Hanford Elementary School District is made up of seven elementary schools (grades K-6) and two junior high schools (grades 7-8), with 4,973 students enrolled in the 1997-1998 school year. Enrollment at the elementary schools is over capacity. The district is leasing 30 portable classrooms and plans to add 10 more for the 1998-1999 school year (White 1998).

Central Union School District consists of four elementary schools, including the two schools on the base and two smaller schools in rural areas. The two schools on-base have a combined enrollment of 1,926 students, but they have had as many as 2,600 students. The maximum student population is estimated at approximately 3,000 students. There are no plans for expansion at this time. Occasionally, children who live off the base may attend one of the schools on the base (Akers or Neutra elementary schools) via an interdistrict transfer. Elementary school children living off the base, however, usually attend schools in the Lemoore Union Elementary School District (Boogard 1997).

Recreational and Community Facilities

NAS Lemoore's craft center provides recreational services for all personnel. The craft center has a discount ticket center for attractions in California and houses an outdoor adventure center where outdoor equipment can be rented and assistance in planning weekend trips to go skiing, white water rafting, and hiking is provided.

NAS Lemoore has a variety of recreation activities available to personnel. Outdoor facilities include a running track, football and baseball fields, tennis and basketball courts, a miniature golf course, and picnic areas. Indoor facilities include a gym, bowling alley, volleyball court, swimming pool, and weight room. There are various wildlife and recreation areas nearby, including the federal and state parks in the Sierra Nevada mountains, and the coastal open space parks along

the Pacific Coast. Most off-base opportunities are within a two-hour drive from the base (US Navy 1994d).

Religious services are provided by the NAS Lemoore Chaplain's Office and include Catholic masses and Protestant services. There are facilities for other denominations in the surrounding communities, including a Jewish Temple in Visalia.

3.3.2 NAF El Centro Alternative

Affected Area

The affected area for NAF El Centro is Imperial County. The affected area was selected based on the assumption that most base personnel commute to work from and spend dollars in Imperial County. Imperial County is bounded by Riverside County to the north, San Diego County to the west, Mexico to the south, and Arizona to the east. The seven incorporated cities in Imperial County are Brawley, Calexico, Calipatria, El Centro (the county seat), Holtville, Imperial, and Westmoreland (Valley of Imperial Development Alliance 1994).

Population

The population in Imperial County totaled approximately 137,100 persons in 1994, which represents a 23.5 percent increase over the 1990 population (Table 3-9). Population density in 1994 was approximately 39 people per square mile (101 people per km^2).

Table 3-9
Population, Imperial County

	Population (1,000s)	Percent Change from 1990
1990	111.0	0.0
1992	128.7	15.9
1994	137.1	23.5

Sources: US Bureau of Economic Analysis 1996i, 1996j.

Employment

Employment by sector for Imperial County is detailed in Table 3-10. Substantial percentage changes from 1990 to 1994 occurred throughout the sectors, illustrating an economy in flux. Decreases included mining (34.9 percent), agricultural services (13.3 percent), and wholesale trade (13.1 percent). Increases included state and local government (29.7 percent), transportation and public utilities (28.5 percent), manufacturing (27.7 percent), retail trade (22.1 percent), finance, insurance, and real estate (11.4 percent), and services (10.6 percent). Military sector employment increased by 1.1 percent.

Table 3-10
Sectors Employment, Imperial County

Sectors	1990	1992	1994	Percent Change 1990 to 1994
Farm	**5,038**	**4,293**	**4,978**	**-1.2**
Nonfarm	**47,858**	**48,369**	**52,373**	**9.4**
Private	**37,758**	**36,883**	**39,677**	**5.1**
Agricultural Services	10,269	7,648	8,904	-13.3
Mining	748	741	487	-34.9
Construction	2,101	2,051	2,037	-3.0
Manufacturing	1,616	1,687	2,064	27.7
Transportation and Public Utilities	1,826	2,032	2,347	28.5
Wholesale Trade	2,424	2,274	2,107	-13.1
Retail Trade	8,296	9,342	10,132	22.1
Finance, Insurance, and Real Estate	1,806	1,836	2,011	11.4
Services	8,672	9,272	9,588	10.6
Government and Government Enterprises	**10,100**	**11,486**	**12,696**	**25.7**
Federal, Civilian	1,143	1,208	1,241	8.6
Military	567	618	573	1.1
State and Local	8,390	9,660	10,882	29.7
Total	**52,896**	**52,662**	**57,351**	**8.4**

Source: US Bureau of Economic Analysis 1996k, 1996l.

The total civilian labor force in 1994 for Imperial County was 57,467 (Table 3-11). There is a 24.9 percent unemployment rate in this affected area. According to the US Bureau of the Census (1994), Imperial County has the tenth highest unemployment rate in the nation and is the only California county that appears on the national list of the top 25 counties with the highest unemployment rate.

Table 3-11
Labor Force and Unemployment, Imperial County

	Labor Force	Unemployed	Unemployment Rate (percent)
1990	48,026	10,228	21.3
1992	54,220	15,313	28.2
1994	57,467	14,317	24.9

Source: US Bureau of Labor Statistics 1996c.

Sources for civilian employment at NAF El Centro include federal civil service positions, nonfederal civil service positions, and contractors and subcontractors.

The base is staffed with a permanent workforce of approximately 863 people (343 military and 520 civilian personnel). Top Imperial County employers in descending order include the Centinela State Prison, County of Imperial, Imperial Irrigation District, and NAF El Centro (Valley of Imperial Development Alliance 1994).

Income

In 1994 the per capita income for Imperial County was $14,302 (Table 3-12). Although between 1990 and 1994, total personal income in the county increased by 15.7 percent, the population change was such that per capita income actually decreased 6.2 percent. This decrease may be a result of competition for limited jobs and resulting lower wages.

Table 3-12
Income by Place of Residence, Imperial County

	Total Personal Income ($1,000s)	Per Capita Income
1990	$1,693,858	$15,255
1992	$1,800,184	$13,986
1994	$1,960,178	$14,302

Sources: US Bureau of Economic Analysis 1996i, 1996j.

Housing

There were 40,323 housing units in Imperial County in 1994, 3,982 of which were vacant, constituting a 9.9 percent vacancy rate (Table 3-13). Over half the housing units are single-family, approximately one quarter are multifamily units, and the rest are mobile homes.

Table 3-13
Housing Stock and Vacancy Rate, Imperial County

	1990	1992	1994
Single-family Units	21,749	22,627	24,011
Multifamily Units	7,987	8,799	9,121
Mobile Homes	6,823	7,131	7,191
Total Housing Units	36,559	38,557	40,323
Vacant	3,717	3,882	3,982
Percent Vacant	10.2	10.1	9.9

Source: California Department of Finance 1990.

The family housing area at NAF El Centro contains 172 single-family houses of which 170 are used for family housing and two are used for a child development center. There are 24 officers units and 146 enlisted units. Approximately 10 housing units are vacant throughout the year. BOQ and BEQ units are in separate complexes dispersed throughout the southern portion of the base. Transient

BOQs are housed in three units. Transient BEQs are housed in five units, and permanent BEQs are in three units. Most of the quarters are wood-frame structures (US Navy 1988a; Scott 1997).

Business Volume

Business volume is defined as local business activity or sales and is the sum of retail and wholesale trade sales, service receipts, and value added by manufacturing. Business volume in Imperial County dipped slightly in 1992 but has remained at approximately $1 million (Table 3-14).

Table 3-14
Business Volume ($1,000s), Imperial County

Sector	1990	1992	1994
Manufacturing	$35,602	$41,788	$55,054
Transportation and Public Utilities	$52,547	$66,640	$84,303
Wholesale Trade	$60,006	$64,839	$66,161
Retail Trade	$126,907	$147,623	$170,152
Finance, Insurance, and Real Estate	$380,532	$18,972	$31,040
Services	$172,435	$200,719	$215,164
Government and Government Enterprises	$282,107	$365,847	$422,873
Total	**$1,110,136**	**$906,428**	**$1,044,747**

Sources: US Bureau of Economic Analysis 1996i, 1996j.

Net Government Revenues

Net government revenues are total financing sources, transfers in (less total financing uses), and transfers out. Net government revenues in Imperial County have shifted from a low of approximately negative $344,000 to a high of $4,495,000 (Table 3-15).

Table 3-15
Net Government Revenues, Imperial County

	Fiscal Years		
	1990/1991	1992/1993	1994/1995
Sources	$102,090,654	$113,881,660	$124,124,779
Uses	$99,152,211	$109,386,268	$124,468,581
Net Revenues	$2,938,443	$4,495,392	($343,802)

Sources: California State Controller 1993, 1995, 1997.

Schools

Imperial County is served by 16 school districts, consisting of nine grades K-8, two grades 9-12, and five grades K-12 school districts (California County Offices of Education 1996b). The school districts serving NAF El Centro are Seeley Union

School District, Central Union High School District, and El Centro School District.

Seeley Union School District is composed of one K-8 school, Seeley Elementary School, which is approximately 1.5 miles (2.4 km) from the southern boundary of the base. All children living on the base attend this school unless parents request a move to another district. Current enrollment is 480 students, with a maximum of 620. Expansion plans for the district include portable classrooms, which are on order (Anderson 1997).

Central Union High School District is made up of two comprehensive high schools and one alternative high school. Current enrollment is 3,411 students, which is below capacity. The district recently opened the second high school in February 1996, and there are no plans to expand (Preciado 1997).

El Centro Elementary School District is composed of 10 schools providing grades K-8 education. Lincoln Elementary School is approximately 5 miles (8 km) from the western border of the base. At present, there are 6,469 students enrolled in the district, which could accommodate up to 6,600 students. A new school was completed in August 1996, and one school will be expanded in the future. No students attending the El Centro School District reside at NAF El Centro (Taylor 1997).

Recreational and Community Facilities

Outdoor recreation areas at NAF El Centro include two tennis courts, two pools, a skeet range, a baseball diamond, a softball field, a football field, shuffleboard courts, handball/racquetball courts, a picnic area, and grass play areas near the baseball field. Indoor recreation areas include a bowling alley, hobby/arts and crafts shop, auto hobby shop, youth center, theater building, enlisted club, officers club, racquetball court, weight room, and aerobics facility. The aerobics area and gymnasium recently were expanded and modernized (Sewester 1997a).

Recreation areas surrounding NAF El Centro include mountains and desert parks in San Diego County, sand dunes to the north and east, the Colorado River in Yuma, Arizona, and Mexico to the south. All areas are easily accessible, and transportation can be provided by the base (Sewester 1997). NAF El Centro also has a full-time chaplain on-base.

3.4 CULTURAL RESOURCES

Definition of Resource

Cultural resources include prehistoric resources, traditional cultural properties, and historic resources. Prehistoric resources are physical properties resulting from human activities that predate written records and that are generally identified as isolated finds or sites. Prehistoric resources can include village sites, temporary camps, lithic scatters, roasting pits and hearths, milling features, petroglyphs, rock features, and burials.

Traditional cultural properties are sites, locations, or features that are eligible for inclusion in the National Register of Historic Places (NRHP) because of their association with cultural practices or beliefs of a living community that are rooted in that community's history and that are important in maintaining the continuing cultural identity of the community. Examples include the following:

- A location associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world;
- A neighborhood that is the traditional home of a particular cultural group and that reflects its beliefs and practices;
- A location where Native American religious practitioners have historically gone and are known or thought to go today to perform ceremonial activities in accordance with traditional cultural rules of practice; and
- A location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historical identity (Parker and King 1992).

Historic resources consist of physical properties, structures, or built items resulting from human activities that post-date written record. Historic resources can include archeological remains and architectural structures. Historic archeological site types include townsites, homesteads, agricultural or ranching features, mining-related features, refuse concentrations, and features or artifacts associated with early military use of the land. Historic architectural resources can include houses, cabins, barns, lighthouses, local structures, such as churches, post offices, and meeting halls, and early military structures, such as hangars, administration buildings, barracks, officers' quarters, warehouses, and guardhouses.

Additional cultural resources may include some properties that are less than 50 years old that may be listed on the NRHP if they are of exceptional importance in our nation's history or if they are integral parts of districts that are eligible for the NRHP. On DOD facilities, these resources typically include properties associated with World War II or the Cold War.

Regulatory Considerations

Cultural resources are protected primarily through the National Historic Preservation Act (NHPA) of 1966 (16 USC §§ 470 *et seq.*), the Archeological and Historic Preservation Act of 1974, the Archeological Resources Protection Act (ARPA) of 1979 (16 USC §§ 470aa *et seq.*), and implementing regulations, and Protection of Historic Properties (36 CFR § 800). Section 106 of the NHPA as amended (PL 89-515), and its implementing regulations (36 CFR §§ 800.9 [a] and [b]) require federal agencies to consider the effects of their actions on properties listed in or eligible for listing in the NRHP. Criteria for inclusion in the NRHP (36 CFR § 60.4) are:

- Association with events that have made a significant contribution to the broad patterns of our history;
- Association with the lives of persons significant in our past;
- Resources that embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master or that possess high artistic values or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- Resources that have yielded or may be likely to yield information important in prehistory or history.

In addition to historic significance, a property must have integrity to be eligible for the NRHP. Integrity is the property's ability to convey its demonstrated historical significance. Seven individual elements compose integrity—location, design, setting, materials, workmanship, feeling, and association.

Area of Potential Effect

To assess the effects of an undertaking on cultural resources, the area of potential effect (APE) must be defined. The regulations define the APE as the geographic area within which the undertaking may cause changes in the character or use of historic properties, if any such properties exist (36 CFR § 800.2[c]). It is important that the APE include the full range of possible impacts, both those that will be direct results of the project and those that could be indirect consequences.

3.4.1 NAS Lemoore Alternative

Affected Area

The affected area for cultural resources includes the entire facility. The APE is limited to those areas where construction and building modification would occur as a result of basing the F/A-18E/F aircraft and personnel at NAS Lemoore. Prehistoric, ethnohistoric, and historic background discussions for NAS Lemoore are provided in Appendix C.

Cultural Resources Studies

Literature review. Two record searches recently have been conducted at the Southern San Joaquin Valley Information Center. The first was conducted in 1993 in support of the EIS for the base realignment of NAS Lemoore. The second was conducted in 1997 in support of a cultural resources inventory of 88 acres (36 ha) at NAS Lemoore. Resources examined consisted of archeological site records, inventory and excavation reports, and properties listed on NRHP, California Historical Landmarks, California Inventory of Historic Resources, and California Points of Historical Interest (Gallegos and Associates 1997, Uribe and Associates 1994).

Previous studies. Five archeological surveys of 430 acres (174 ha) have been conducted on NAS Lemoore (Office of Environmental Quality 1983; Sutton 1989; Yohe 1991; Woodward-Clyde 1993; Gallegos and Associates 1997). In addition, a historic and archeological resources protection plan was prepared for NAS Lemoore (Milliken and Mikesell 1997). This document describes high-sensitivity and low-sensitivity zones on NAS Lemoore for cultural resources. The station has four high-sensitivity zones, totaling 760 acres (308 ha), for surface archeological sites. The remaining 17,611 acres (7,132 ha) of the installation are considered a low-sensitivity zone for surface sites (Milliken and Mikesell 1997). Three of the sites for proposed F/A-18E/F facilities have been surveyed for cultural resources and the remaining areas are within the low-sensitivity zone for surface archeological sites.

Known Resources

Prehistoric sites. Sixteen prehistoric sites have been recorded within a 5-mile (8-km) radius of the APE and include lithic concentrations, habitation/occupation sites, and human burials. However, no prehistoric sites have been recorded within NAS Lemoore (US Navy 1994d). Most of NAS Lemoore, 17,611 acres (7,132 ha) of the total 18,371-acre (7,440-ha) installation, has been identified as a low-sensitivity zone for surface prehistoric archeological sites. The entire NAS Lemoore APE falls within this low-sensitivity zone where prehistoric archeological sites are not likely to exist.

Traditional cultural properties. In 1994, in an attempt to identify Native American traditional cultural properties on NAS Lemoore, the Navy contacted all Native American groups with historical ties to the San Joaquin Valley, as identified by the California Native American Heritage Commission. The contacted groups included the Tule River Indian Tribe, Santa Rosa Indian Community, Central Valley and Mountain Reinterment Association, Big Sandy Rancheria of Mono Indians, Cold Springs Rancheria of Mono Indians, and the Table Mountain Rancheria. These groups were provided an opportunity to comment on noise levels associated with NAS Lemoore and the much larger proposed Lemoore Military Flight Operating Area (Wall 1994a). None of the contacted groups raised any concerns regarding properties of traditional religious or cultural importance on NAS Lemoore (Milliken and Mikesell 1997).

No traditional cultural properties or other Native American resources have been identified at NAS Lemoore. No Native American groups or representatives have raised concerns concerning aircraft and other mission operations at NAS Lemoore.

Historic archeological sites. Historic archeological sites in the vicinity of NAS Lemoore include homesites/farmstead locations, historic refuse concentrations, and granite quarries and associated construction refuse from quarrying activities (US Navy 1994d). However, no historic archeological sites have been identified within the APE. The entire APE falls within the low-sensitivity zone where historic archeological sites are not expected to exist.

Historic architectural resources. No historic structures that would qualify for listing on the NHRP have been identified on NAS Lemoore. The installation was constructed between 1957 and 1961; therefore, there are no standing structures on NAS Lemoore that are 50 years old or older. However, the Neutra Elementary School in the Family Housing Area has the potential for inclusion in the NRHP. Although the school was built in the late 1950s, its design is based on plans drafted in the 1920s by well-known Los Angeles architect, Richard Neutra. Neutra won an architectural design competition with these plans and established a new approach for school design in the nation. The potential for the school's NRHP-eligibility has been established through Thomas Hines, the principal biographer of Neutra, who believes that the school "will qualify for inclusion in the National Register, if not today, when it reaches 50 years of age" (Wall 1994b). The Historic and Archeological Resources Protection Plan for the Years 1997 to 2002 for NAS Lemoore recommends that Neutra Elementary School be managed as though it were eligible for the NRHP until a formal determination is made (Milliken and Mikesell 1997).

NAS Lemoore was established during the Cold War era (from 1946 to 1989); however, the facilities and structures do not qualify for inclusion in the NRHP under a Cold War context because they do not meet the "exceptionally significant" criterion for properties that are less than 50 years old. NAS Lemoore does not appear to have made an exceptional contribution to the national Cold War program but rather functioned as part of the vast support complex. The mission and accomplishments at NAS Lemoore during the Cold War era were routine, rather than exceptional; therefore, the structures and facilities on the installation are unlikely to be eligible for the NRHP as Cold War properties (Milliken and Mikesell 1997).

Buildings and structures to be expanded or modified for the F/A-18E/F siting at NAS Lemoore consist of two maintenance hangars (Buildings 300 and 330), the Strike Fighter Weapons School (Building 104), the airframe shop (Building 188), the engine maintenance shop (Building 170), and the avionics shop (Building 160). These facilities do not qualify for inclusion in the NRHP as historic structures or as Cold War properties.

Subsurface deposits. Prehistoric archeological sites, if they exist on the Los Gatos alluvial fan upon which NAS Lemoore sits, would be found at depths of 9.8 feet (3 m) or more. It is doubtful that archeological sites would be found in the first 4 to 6 feet (1 to 2 m) below grade because of the agricultural practice known as "raking," which broke up and mixed the alkali soils that accumulated on the surface with the first 4 to 6 feet (1 to 2 m) of underlying soil. Raking was and continues to be used every year or two to permit continued use of the land for irrigated agriculture (Wall 1997).

Due to the relative lack of historic archaeological sites on NAS Lemoore and the extent of raking and tilling of the land in the last 100 years, the potential for intact subsurface historic deposits is considered low.

3.4.2 NAF El Centro Alternative

Affected Area

The affected area for cultural resources includes the entire facility. The APE is limited to those areas where construction and building modification would occur as a result of using the F/A-18E/F aircraft and personnel at NAF El Centro. Prehistoric, ethnohistoric, and historic background discussions for NAF El Centro are provided in Appendix C.

Cultural Resources Studies

Literature review. Archival research, including a review of the Navy plan files was completed as part of a cultural resources survey of NAF El Centro (Apple et al. 1994). A records and literature search also was conducted with the Southeast Information Center in support of the EIS for the proposed closure of NAF El Centro (US Navy 1990a).

Previous studies. An intensive pedestrian survey of the main NAF El Centro installation was completed in 1994 (Apple et al. 1994). Also in 1994, an architectural survey of all existing pre-1946 structures within the main NAF El Centro installation was conducted (Apple et al. 1994).

Known Resources

Prehistoric sites. One prehistoric site, a lithic scatter, has been identified on NAF El Centro. This site is not considered eligible for the NRHP (Apple et al. 1994).

Traditional cultural properties. Procedures for Native American consultation have been specified for the discovery of Native American burial remains or items of cultural patrimony, and several Native American groups have been identified with cultural affiliations to NAF El Centro (Apple et al. 1994).

No traditional cultural properties or other Native American resources have been identified at NAF El Centro. No concerns have been raised by Native American groups or representatives concerning flight and other mission operations at NAF El Centro.

Historic archeological sites. Seven historic archeological sites have been recorded on NAF El Centro and consist of a foundation and associated debris (4-IMP-6451H), an early to mid-1900s trash dump with 1940s military debris (4-IMP-6989H), and five scatters of historic domestic debris dating from the 1920s to the 1940s (Apple et al. 1994). The potential for subsurface deposits on two historic sites (4-IMP-6451H and 4-IMP-6989H) was good, and these sites were considered potentially eligible for the NRHP. The remaining five refuse scatters are considered not likely to be eligible for the NRHP (Apple et al. 1994).

Sites 4-IMP-6451H and 4-IMP-6989H were evaluated for eligibility to the NRHP in 1996 (Dolan and Allen 1996). Both sites were highly disturbed and lacked physical integrity. These two sites did not contain sufficient archeological information to satisfy any of the four NRHP criteria and were identified as ineligible for the NRHP (Dolan and Allen 1996).

Historic architectural resources. An architectural inventory of NAF El Centro resulted in the identification and evaluation of 113 historic buildings and structures on the installation. All of these were constructed between 1942 and 1945 during World War II.

None of these structures were recommended as eligible for the NRHP because they lack integrity, architectural or engineering distinction, or association with important persons or events. Structural alterations, destruction of older buildings, and construction of facilities at NAF EL Centro have occurred to a degree that has compromised the integrity of the structures and the facility as a whole so that it no longer represents the distinct characteristics of a type, period, or method of construction and does not retain any sense of time and place reflective of its role during World War II. Although the airbase is strongly associated with the Navy Blue Angels, this association is recent, beginning in 1967 (Apple et al. 1994).

Buildings or structures to be expanded or modified for the F/A-18E/F siting at NAF El Centro include a runway, the combat aircraft loading area, and the open storage area. These facilities do not have building numbers. The runway and the combat aircraft loading area, originally pre-1946 structures, have both been replaced with newer configurations and lack original integrity. Therefore, they are not considered eligible for the NRHP (Apple et al. 1994). The combat aircraft loading area is a modern facility and is not eligible for the NRHP.

Subsurface deposits. Subsurface deposits were considered likely for two historic sites on NAF El Centro; however, formal evaluation of these sites determined that they were not eligible for the NRHP (Dolan and Allen 1996). there may be subsurface prehistoric or historic deposits on NAF El Centro; however, given the low frequency of archeological sites in the general vicinity and the elevation of the base below the ancient shoreline of Lake Cahuilla, the potential for subsurface deposits is considered low (US Navy 1987a).

3.5 TRAFFIC AND CIRCULATION

This section describes traffic and circulation at each alternative base and includes the existing street system, intersection operating conditions, and roadway operating conditions for each base and the surrounding areas.

Definition of Resource

Traffic and circulation refers to the movement of vehicles on local and regional street networks. The local street network is described as a hierarchy of streets classified by function. For example, arterial streets are typically four or more lanes that connect limited access highways to the local collector streets, which "collect" traffic from the local neighborhood-serving streets.

Operating conditions and the adequacy of the existing and future roadway system are described in terms of the level of service (LOS). The LOS measure for intersections and roadways is an indicator of a roadway's ability to accommodate vehicular movement. LOS describes operational conditions as influenced by speed, travel time, freedom to maneuver, safety, driving comfort, and convenience. LOS measures range from good conditions (LOS A) through gridlock conditions (LOS F). LOS A reflects free, unobstructed flow conditions, while LOS D indicates unstable traffic flow and significant travel delays during the peak travel hours. The LOS for intersections is based on the delay at the intersection, while the LOS for roadway segments is based on the volume-to-capacity (V/C) ratio. The LOS ranges are defined in Table 3-16 for intersections and in Table 3-17 for street segments.

Table 3-16
Intersections Level of Service Definitions

Level of Service (LOS)	Expected Delay	Signalized Intersection Vehicle Delay (Seconds)	Unsignalized Intersection Vehicle Delay (Seconds)
A	Little or no delay	≤ 5.0	≤ 5.0
B	Short traffic delays	5.1 - 15.0	5.0 - 10.0
C	Average traffic delays	15.1 - 25.0	10.1 - 20.0
D	Long traffic delays	25.1 - 40.0	20.1 - 30.0
E	Very long traffic delays	40.1 - 60.0	30.1 - 45.0
F	Extreme delays potentially affecting other traffic movements in the intersection	> 60.0	> 45.0

Source: Transportation Research Board 1994.

Table 3-17
Street Segments Level of Service Definitions

LOS	Volume-to-Capacity (V/C)
A	≤ 30.1
B	30.1 - 50.0
C	50.1 - 75.0
D	75.1 - 90.0
E	90.1 – 100
F	> 100

Source: US Navy 1994d.

Peak hours correspond to the periods of the day with the highest traffic volumes on the street network. The morning (or AM) peak hour reflects the morning commute to work. For this analysis, the AM peak hour is assumed to be between 7:00 and 8:00 in the morning. The evening (or PM) peak hour reflects the commute from work to home. For this analysis, the PM peak hour is assumed to be between 4:00 and 5:00 in the afternoon. Traffic generated during AM and PM peak hours has the greatest potential to affect intersection and roadway LOS.

For the traffic analysis, 1999 was used as the realignment year for each alternative site. The 1999 projected traffic volumes were developed by applying a two percent per year growth factor to 1996 traffic volumes. For the purposes of this analysis, "projected" refers to a 1999 condition, while "existing" refers to existing 1996 conditions. The level of service analysis and the volumes shown in this section are 1999 projected conditions.

Regulatory Considerations

US Department of Transportation. The Federal Highway Administration is the agency of the Department of Transportation responsible for the federally funded roadway system, including the interstate highway network and portions of the primary state highway network.

California Department of Transportation (Caltrans). Caltrans is responsible for planning, designing, constructing, and maintaining all state highways. Caltrans jurisdictional interest would extend to improvements to roadways at the interchange ramps serving area freeways. Any federally funded transportation improvements would be subject to review by Caltrans staff and the California Transportation Commission.

3.5.1 NAS Lemoore Alternative

Affected Area

The affected area for the traffic analysis includes State Route 198 and State Route 41 near NAS Lemoore, as well as several local access routes. Local access to NAS Lemoore, includes Grangeville Road, which provides direct access to the

Operations Gate from the cities of Hanford and Lemoore, Avenal Cutoff Road from Interstate 5 (I-5), and Jackson Avenue from SR-41. Major intersections near NAS Lemoore along these roadways are included in the traffic analysis. The affected area was determined based on the location of NAS Lemoore and circulation patterns of traffic accessing the site on the surrounding transportation system. The affected area does not include roadways and intersections on-base.

Road Network

NAS Lemoore is accessed by traveling eastbound on State Route 198 from I-5 near Coalinga or westbound on SR-198 from Highway 99 through the cities of Hanford and Lemoore. The main gate for NAS Lemoore takes direct access from a signalized intersection at SR-198. A description of key roadway network components is presented below.

State Route 198 (SR-198). SR-198 is generally a four-lane, east-west highway that connects I-5 and Highway 99 and provides direct access to Lemoore, Hanford, and other communities. In the immediate vicinity of the naval base, SR-198 is four lanes between the main gate and SR-41 and two lanes west of the main gate.

State Route 41 (SR-41). SR-41 is generally a four-lane, north-south highway providing access to Lemoore in the base vicinity and direct access to Fresno, 35 miles (56 km) to the north. SR-41 forms a full diamond interchange at SR-198 and is signalized at Grangeville Boulevard. Caltrans plans to begin widening 2.8 miles (4.5 km) of SR-41 in a section of existing two-lane highway to a four-lane divided expressway. The footprint of the project is from 0.7 miles (1.1 km) south of SR-198 to 0.3 miles (0.5 km) north of Hanford-Armona Road. Construction should be complete by 1999.

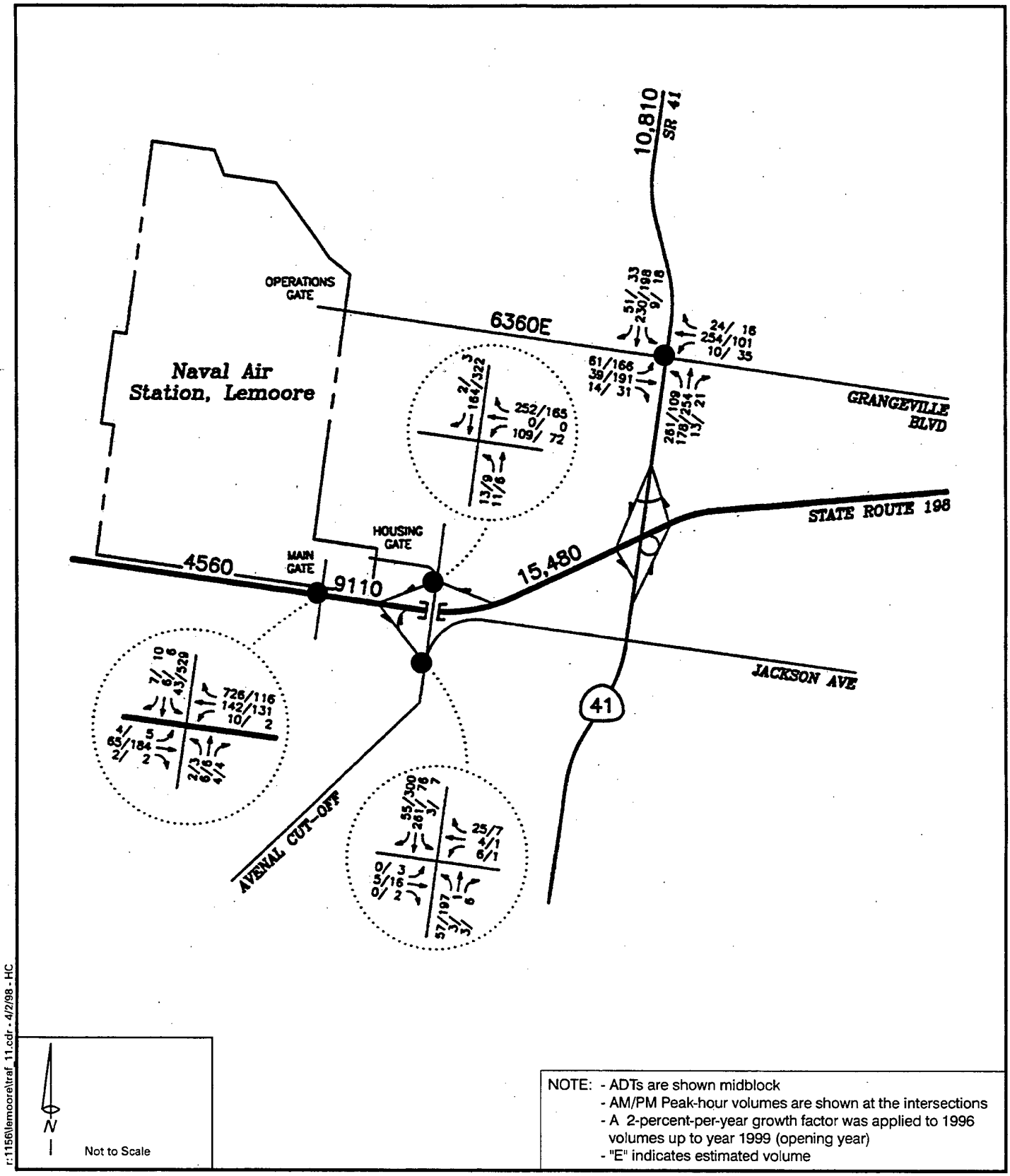
Grangeville Boulevard. Grangeville Boulevard is a two-lane, east-west road that provides direct access to the naval base. It is classified as an arterial roadway with no curbside parking. Grangeville Boulevard is signalized at the interchange with SR-41.

Avenal Cutoff Road. Avenal Cutoff Road is a two-lane, north-south roadway. It is classified as an arterial roadway and forms an interchange with SR-198.

Jackson Street. Jackson Street is a two-lane, east-west roadway providing access between SR-41 and SR-198. It is classified as a major collector roadway.

Traffic Volumes

Figure 3-18 shows the calculated 1999 on-street average daily trips (ADTs) and AM/PM peak hour intersection volumes. The ADTs were obtained from Caltrans. The peak hour turning movement volumes were obtained from the traffic study prepared for the NAS Lemoore Base Realignment (TJKM 1994). The



NOTE: - ADTs are shown midblock
- AM/PM Peak-hour volumes are shown at the intersections
- A 2-percent-per-year growth factor was applied to 1996 volumes up to year 1999 (opening year)
- "E" indicates estimated volume

Peak-hour traffic volumes at the primary access intersections do not exceed roadway capacities.

LEGEND:

- Analysis Intersections
- AM/PM Peak-Hour Volumes
- 1,000 Average Daily Trips

NAS Lemoore 1999 Traffic Volumes AM/PM Peak Hours & ADTs

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: Linscott, Law, & Greenspan 1997.

Figure 3-18

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1999 volumes shown on Figure 3-18 reflect a two percent per year growth rate that has been applied to measured 1996 volumes. A peak hour analysis was conducted at the following four intersections near the base:

- SR-198/NAS Lemoore main gate;
- Avenal Cutoff Road/SR-198 westbound ramps;
- Avenal Cutoff Road/SR-198 eastbound ramps; and
- SR-41/Grangeville Boulevard.

Levels of Service

Intersections. Tables 3-18 and 3-19 summarize the LOS analysis for the signalized and unsignalized intersections, respectively. The Grangeville Road/SR-41

Table 3-18
NAS Lemoore Signalized Intersection Operations

		Projected 1999 Conditions	
Intersection	Peak hour	Delay (Seconds)	LOS
Grangeville	AM	13.6	B
	PM	13.0	B
SR-198/main gate	AM	6.4	B
	PM	12.3	B

Source: Dowling Associates 1997.

Table 3-19
NAS Lemoore Unsignalized Intersections Operations

			Projected 1999 Conditions	
Intersection	Peak hour	Movement	Delay (Seconds)	LOS
Avenal Cutoff Road/EB SR-198 ramps	AM	EB - L/T	5.6	B
		EB - R	3.7	A
		WB - L/T	5.8	B
		WB - R	2.7	A
		NB - L	3.0	A
		SB - L	2.1	A
	PM	EB - L/T	6.0	B
		EB - R	2.9	A
		WB - L/T	5.9	B
		WB - R	2.6	A
		NB - L	2.7	A
		SB - L	2.1	A
Avenal Cutoff/WB SR-198 ramps	AM	WB - L	5.4	B
		WB - R	3.5	A
		NB - L	2.6	A
	PM	WB - L	6.5	B
		WB - R	8.0	A
		NB - L	3.1	A

LOS = Level of Service
L = Left-turn
R = Right-turn
T = Through movement
EB = Eastbound
WB = Westbound
NB = Northbound
SB = Southbound

Source: Dowling Associates 1997.

intersection operates at LOS B during both the AM and PM peak hours. The SR-198/main gate intersection operates at LOS B during both the AM and PM peak hours. As shown in Table 3-19, all movements at the key unsignalized intersections were evaluated, and both Avenal Cutoff Road intersections with SR-198 are expected to operate at LOS B or better.

Roadways. As indicated in Table 3-20, each street segment in the affected area operates daily at LOS B or better.

Table 3-20
NAS Lemoore Daily Street Segment Operations

Street Segment	Capacity	Projected 1999 Conditions Volume	V/C	LOS
SR-198				
West of main gate	14,000	4,560	0.33	B
East of main gate	31,000	9,110	0.29	A
Grangeville Boulevard				
West of SR-41	14,000	6,360	0.45	B
SR-41				
North of Grangeville	43,000	10,810	0.25	A

Capacities and V/C ratio thresholds are based on Caltrans standards.
Source: Dowling Associates 1997.

Transit Services

NAS Lemoore is served by Kings Area Rural Transit. Bus access directly to the base is provided from neighboring cities, including Hanford and Lemoore. According to NAS Lemoore planning staff, base personnel rarely use transit.

3.5.2 NAF El Centro Alternative

Affected Area

The affected area for the traffic analysis includes Evan Hewes Highway (County Highway 80), which is the main east-west route from El Centro to NAF El Centro. Local north-south access to NAF El Centro includes Drew Road, Bennett Road, and Forrester Road. The gate to NAF El Centro is at the north end of Bennett Road. Major intersections along these roadways near NAF El Centro are included in the traffic analysis. The affected area was determined based on the location of NAF El Centro and circulation patterns of traffic accessing the site on the surrounding transportation system. The affected area does not include on-base roadways and intersections.

Road Network

Regional access to NAF El Centro is from Interstate 8 via interchanges with local roadways. Evan Hewes Highway runs parallel to Interstate 8 to the north, providing access between the city of El Centro and the base. Local access to the main gate is along Bennett Road.

Interstate 8 (I-8). I-8 is a four-lane divided freeway in the project vicinity that provides east-west access within southern Imperial County between the San Diego County border and Yuma, Arizona. I-8 is constructed with complete grade separation at all interchanges.

State Route 111 (SR-111). SR-111 is a north-south highway providing access to Calexico and Mexico from the cities of El Centro and Brawley. SR-111 is a four-lane divided roadway south of I-8 and a two-lane undivided roadway north of I-8.

Evan Hewes Highway (S-80). S-80 is a two- to four-lane road that runs parallel to I-8 from the cities of Ocotillo to Holtville and provides access to NAF El Centro via Bennett Road. S-80 is classified as a collector roadway. Evan Hewes Highway is stop sign-controlled at Drew Road, Bennett Road, and Forrester Road and is signalized at Imperial Avenue.

Drew Road. Drew Road is a north-south roadway classified as a collector. Drew Road is a two-lane, undivided roadway and provides access to I-8 via a full diamond interchange with stop sign controls at the east- and westbound off-ramps.

Bennett Road. Bennett Road is a north-south, two-lane undivided roadway classified as a local street. It provides direct access to the main gate at NAF El Centro via Evan Hewes Highway, where it is stop sign-controlled.

Forrester Road. Forrester Road is a north-south, two-lane undivided roadway classified as a collector. It provides a connection between Brawley and I-8 west of El Centro. It has an interchange at I-8 and is stop sign-controlled at both the eastbound and westbound off-ramps.

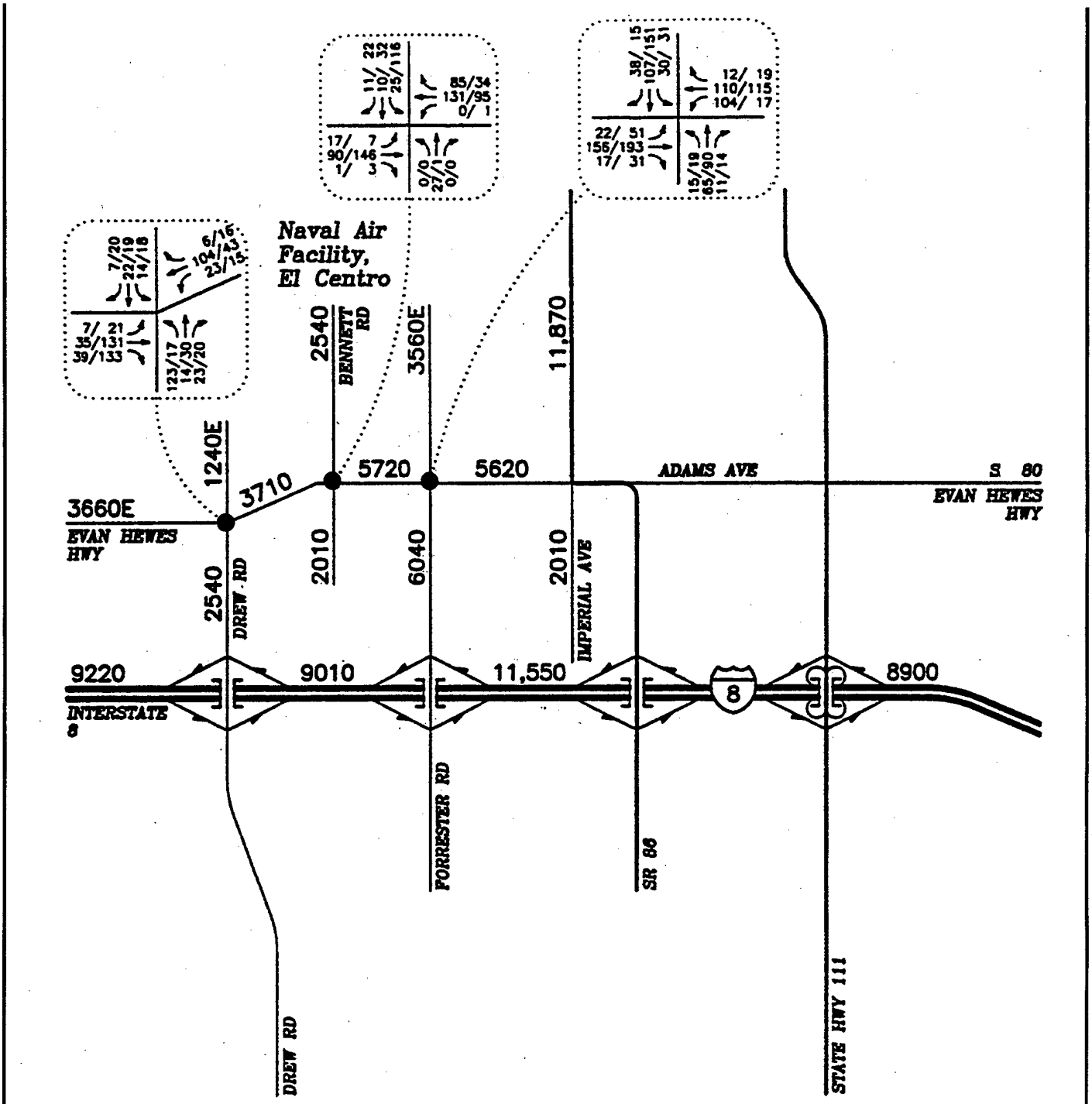
Traffic Volumes

Figure 3-19 shows the calculated 1999 on-street ADTs and AM and PM peak hour intersection traffic volumes. The ADTs were obtained from Caltrans and Imperial County records. The 1999 volumes shown on Figure 3-19 reflect a two percent per year growth rate that has been applied to the measured 1996 volumes. The AM/PM peak hour turning movement counts were conducted in June 1996 at the following three intersections near the base:

- Evan Hewes Highway (S-80)/Drew Road;
- Evan Hewes Highway (S-80)/Bennett Road; and
- Evan Hewes Highway (S-80)/Forrester Road.

Levels of Service

Intersections. As shown in Table 3-21, all three key unsignalized intersections operate at LOS A during both the AM and PM peak hours.



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Peak-hour traffic voumes at primary access intersections do not exceed roadway capacities.

LEGEND:

- Analysis Intersections
- AM/PM Peak-Hour Volumes
- 1,000 Average Daily Trips

NAF El Centro 1999 Traffic Volumes AM/PM Peak Hours & ADTs

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: Linscott, Law, & Greenspan 1997.

Figure 3-19

Table 3-21
NAF El Centro Unsignalized Intersection Operations

Intersection	Peak hour	Projected 1999 Conditions Delay (Seconds)	LOS
Evan Hewes/Drew Road	AM	2.9	A
	PM	3.0	A
Evan Hewes/Bennett Road	AM	2.5	A
	PM	2.8	A
Evan Hewes/Forrester Road	AM	4.9	A
	PM	4.9	A

Each of these intersections are all-way stop sign-controlled.
Source: Dowling Associates 1997.

Roadways. As shown in Table 3-22, each street segment in the affected area operates daily at LOS B or better.

Table 3-22
NAF El Centro Daily Street Segment Operations

Street Segment	Capacity (LOS E)	Projected 1999 Conditions Volume	V/C	LOS
Evan Hewes (S-80)				
West of Drew Road	14,000	3,660	0.26	A
East of Forrester Road	14,000	5,620	0.40	B
Drew Road				
North of Evan Hewes	14,000	1,240	0.09	A
South of Evan Hewes	14,000	2,540	0.18	A
Bennett Road				
South of Evan Hewes	14,000	2,010	0.14	A
Forrester Road				
North of Evan Hewes	14,000	3,560	0.25	A
South of Evan Hewes	14,000	6,040	0.43	B

Capacities and V/C ratio thresholds are based on Caltrans standards.
Source: Dowling Associates 1997.

Transit Services

Bus transportation is provided to NAF El Centro from the El Centro area 365 days per year. The Liberty Shuttle provides service between NAF El Centro and several locations in the surrounding community between 7:00 PM and 2:15 AM. Cab service also is provided when necessary.

3.6 AIR QUALITY

This section describes air quality conditions at each alternative base and addresses air quality terminology, air quality conditions, and regulatory situations applicable to the F/A-18E/F action.

Definition of Resource

Air pollution discussions require an understanding of terms that have a technical meaning. At a general level it is important to understand the distinction between air pollutant emissions and ambient air quality. Other important terms include primary pollutants, secondary pollutants, and pollutant precursors.

Emissions and Ambient Air Quality

The term pollutant emissions refers to the amount (usually stated as a weight) of one or more specific compounds introduced into the atmosphere by a source or group of sources. In practice, most pollutant emissions data are presented as emission rates—the amount of pollutants emitted during a specified increment of time or during a specified increment of emission source activity. Typical measurement units for emission rates on a time basis include pounds per hour, pounds per day, or tons per year. Typical measurement units for emission rates on a source activity basis include pounds per thousand gallons of fuel burned, pounds per ton of material processed, and grams per vehicle mile of travel.

The term ambient air quality refers to the atmospheric concentration of a specific compound (amount of pollutants in a specified volume of air) actually experienced at a particular geographic location that may be some distance from the source of the relevant pollutant emissions. The ambient air quality levels actually measured at a particular location are determined by the interactions among emissions, meteorology, and chemistry. Emission considerations include the types, amounts, and locations of pollutants emitted into the atmosphere. Meteorological considerations include wind and precipitation patterns affecting the distribution, dilution, and removal of pollutant emissions. Chemical considerations are important when chemical reactions that transform pollutant emissions into other chemical substances.

Ambient air quality data generally are reported as a mass-per-unit volume (e.g., micrograms per cubic meter of air) or as a volume fraction (e.g., parts per million by volume). Measurements of particulate matter concentrations normally are reported in units of micrograms per cubic meter.

Primary Pollutants, Secondary Pollutants, and Pollutant Precursors

Air pollutants are often characterized as being primary or secondary pollutants. Primary pollutants are those emitted directly into the atmosphere, such as carbon monoxide (CO), sulfur dioxide (SO_2), lead particulates, and hydrogen sulfide. Secondary pollutants are those formed through chemical reactions in the atmosphere, such as ozone (O_3), nitrogen dioxide (NO_2), and sulfate particles. Atmospheric chemical reactions usually involve primary pollutants, normal

constituents of the atmosphere, and other secondary pollutants. Meteorological conditions, such as temperature, humidity, and the intensity of ultraviolet light also can play an important role in atmospheric chemistry.

Those compounds that react to form secondary pollutants often are referred to as reactive pollutants, pollutant precursors, or precursor emission products. Some air pollutants, such as many organic gases and suspended particulate matter, are a combination of primary and secondary pollutants.

Ozone Precursor Emissions. Ozone, a major component of photochemical smog, is the secondary pollutant of greatest concern in most portions of California. The pollutant emissions generally categorized as ozone precursors fall into two broad groups of chemicals—nitrogen oxides and organic compounds. Many different terms are used to refer to these groups of ozone precursors.

The terms "nitrogen oxides" and "oxides of nitrogen" are often used interchangeably to refer to the combination of nitric oxide and nitrogen dioxide. This combination of nitrogen oxides often is designated by the symbol NO_x. Nitrogen dioxide is itself a secondary pollutant, generally formed from nitric oxide.

Organic compound precursors of ozone are routinely described by a large number of different terms. The phrase reactive organic compounds is the most accurate terminology for describing organic compound precursors of ozone, but the acronym for that phrase is not widely used. The closest widely used acronym is ROG (reactive organic gases). To avoid inventing a new acronym, ROG will be used in this document to mean reactive organic compounds.

Particulate Matter Precursors. Inhalable particulate matter (PM_{10}) can be generated as a primary pollutant by abrasion or erosion processes. PM_{10} also can form as a secondary pollutant through chemical reactions or by condensation of gaseous pollutants into fine aerosols. Major gaseous precursors of PM_{10} include reactive organic gases, sulfur oxides, and nitrogen oxides. Additional precursors of PM_{10} can include ammonia, hydrogen sulfide, sulfuric acid, and nitric acid.

Ambient Air Quality Standards

Both the State of California and the federal government have established ambient air quality standards for several different pollutants (Table 3-23), which often are referred to as criteria pollutants. Ambient standards for some of these pollutants have been set for both short and long periods. Federal ambient air quality standards are based on evidence of acute and chronic health effects. Most state ambient air quality standards are based primarily on health effects data but can reflect other considerations, such as protection of crops, protection of materials, or avoidance of nuisance conditions (i.e., odors).

Table 3-23
Ambient Air Quality Standards

Pollutant	Symbol	Averaging Time	Standard, as parts per million		Standard, as micrograms per cubic meter		Violation Criteria	
			California	National	California	National	California	National
Ozone	O_3	1 Hour	0.09	0.12	180	235	If exceeded	If exceeded on more than 3 days in a 3-year period
		8 hours	—	0.08	—	160	—	If exceeded by the mean of annual 4th highest daily values for a 3-year period.
Carbon Monoxide	CO	8 Hours	9.0	9	10,000	10,000	If exceeded	If exceeded on more than 1 day per year
		1 Hour	20	35	23,000	40,000	If exceeded	If exceeded on more than 1 day per year
(Lake Tahoe only)		8 Hours	6	—	7,000	—	If exceeded	—
Inhalable Particulate Matter	PM_{10}	Annual Geometric Mean	—	—	30	—	If exceeded	—
		Annual Arithmetic Mean	—	—	—	50	—	If exceeded as a 3-year single station average
		24 Hours	—	—	50	150	If exceeded	If exceeded by the mean of annual 99th percentile values over 3 years
Fine Particulate Matter	$PM_{2.5}$	Annual Arithmetic Mean	—	—	—	15	—	If exceeded as a 3-year spatial average of data from designated stations
		24 Hours	—	—	—	65	—	If exceeded by the mean of annual 98th percentile values over 3 years
Nitrogen Dioxide	NO_2	Annual Average	—	0.053	—	100	—	If exceeded
		1 Hour	0.25	—	470	—	If exceeded	—
Sulfur Dioxide	SO_2	Annual Average	—	0.03	—	80	—	If exceeded
		24 Hours	0.04	0.14	105	365	If exceeded	If exceeded on more than 1 day per year
		3 Hours	—	0.5	—	1,300	—	If exceeded on more than 1 day per year
		1 Hour	0.25	—	655	—	If exceeded	—
Lead Particles	Pb	Calendar Quarter	—	—	—	1.5	—	If exceeded
		30 Days	—	—	1.5	—	If equaled or exceeded	—
Sulfate Particles	SO_4	24 Hours	—	—	25	—	If equaled or exceeded	—
Hydrogen Sulfide	H_2S	1 Hour	0.03	—	42	—	If equaled or exceeded	—
Vinyl Chloride	C_2H_3Cl	24 Hours	0.010	—	26	—	If equaled or exceeded	—

Notes: All standards except the national PM_{10} and $PM_{2.5}$ standards are based on measurements corrected to 25 degrees C and 1 atmosphere pressure.
The national PM_{10} and $PM_{2.5}$ standards are based on direct flow volume data without correction to standard temperature and pressure.
Decimal places shown for standards reflect the rounding precision used for evaluating compliance.
Except for the 3-hour sulfur dioxide standard, the national standards shown are the primary (health effects) standards.
The national 3-hour sulfur dioxide standard is a secondary (welfare effects) standards.
EPA adopted new ozone and particulate matter standards on July 18, 1997; the new standards became effective on September 16, 1997.
The national 1-hour ozone standard will be rescinded for an area when EPA determines that the standard has been achieved in that area.
Previous national PM_{10} standards (which had different violation criteria than the September 1997 standards) will remain in effect for existing PM_{10} nonattainment areas until EPA takes actions required by Section 172(e) of the Clean Air Act or approves emission control programs for the relevant PM_{10} state implementation plan.
Violation criteria for all standards except the national annual standard for $PM_{2.5}$ are applied to data from individual monitoring sites.
Violation criteria for the national annual standard for $PM_{2.5}$ are applied to a spatial average of data from one or more community-oriented monitoring sites representative of exposures at neighborhood or larger spatial scales (40 CFR § 58).
The "10" in PM_{10} and the "2.5" in $PM_{2.5}$ are not particle size limits; these numbers identify the particle size class (aerodynamic equivalent diameters in microns) collected with 50% mass efficiency by certified sampling equipment. The maximum particle size collected by PM_{10} samplers is about 50 microns aerodynamic equivalent diameter; the maximum particle size collected by $PM_{2.5}$ samplers is about 6 microns aerodynamic equivalent diameter (40 CFR § 53).

Source: California Air Resources Board 1991. State and National Ambient Air Quality Standards (ARB Fact Sheet 39). 40 CFR §§ 50, 53, and 58.

The US Environmental Protection Agency (EPA) revised the violation criteria for the existing PM_{10} standards, adopted a new 8-hour ozone standard, and adopted new fine particle ($PM_{2.5}$) standards in July 1997. These standards became effective in September 1997, but nonattainment designations relating to these standards will not be made for at least three years. The federal 1-hour ozone standard will be rescinded for an area only after EPA determines that it has been achieved in that area. The previous PM_{10} standards will be rescinded (with the revised PM_{10} standards remaining in place) after emission control programs required by the previous standards are approved by EPA. Because monitoring networks for the new $PM_{2.5}$ standards are not yet in place, implementation of those standards will take several years.

Areas that violate a federal air quality standard are designated as nonattainment areas. Nonattainment designations for ozone, carbon monoxide, and PM_{10} include subcategories indicating the severity of the air quality problem. Areas that comply with federal air quality standards are designated as attainment areas. Areas that have been reclassified from nonattainment to attainment are designated as attainment/maintenance areas. Areas that lack monitoring data to demonstrate attainment or nonattainment status are designated as unclassified areas and are treated as attainment areas for various regulatory purposes.

Table 3-24 summarizes the federal and state attainment status designations for the two alternative receiving installations. Both NAS Lemoore and NAF El Centro are nonattainment for the federal and state ozone standards, as well as the federal and state PM_{10} standards.

Regulatory Considerations

Air pollution control programs were established in California prior to the enactment of federal requirements. Responsibility for air quality management programs in California is divided between California Air Resources Board (CARB), as the primary state air quality management agency, and air pollution control districts, as the primary local air quality management agencies. Federal Clean Air Act (CAA) legislation in the 1970s resulted in a gradual merger of local and federal air quality programs, particularly stationary source air quality permit programs.

Many types of industrial and commercial facilities require air quality permits for their equipment and operations. Local air pollution control districts are responsible for air quality permit programs in California. Permit authority is derived from a combination of state and federal legislation. In general, federally required New Source Review (NSR) and Prevention of Significant Deterioration (PSD) air quality permit programs have been integrated into the pre-existing state and local permit program. This results in a two-step permit process for new stationary emission sources—an initial authority to construct (ATC) permit and a subsequent permit to operate (PTO).

Table 3-24
Federal and State Attainment Status for Alternative Receiving Installations

Installation	County	Pollutant	Federal Status	State Status
NAS Lemoore	Fresno and Kings Counties	Ozone	Nonattainment	Nonattainment
		Carbon monoxide	Attainment	Attainment
		Nitrogen dioxide	Attainment	Attainment
		PM_{10}[1]	Nonattainment	Nonattainment
		Sulfur dioxide	Unclassified	Attainment
		Lead	No designation[2]	Attainment
NAF El Centro	Imperial County	Ozone	Nonattainment	Nonattainment
		Carbon monoxide	Attainment	Attainment
		Nitrogen dioxide	Attainment	Attainment
		PM_{10}	Nonattainment	Nonattainment
		Sulfur dioxide	Attainment	Attainment
		Lead	No designation[2]	Attainment

[1] PM_{10} = inhalable particulate matter.
[2] US EPA is not required to do a formal attainment/nonattainment classification for the lead standard.

Notes: Only nonattainment designations are made for the federal lead standard; formal attainment designations are made only for redesignation purposes

Sources: 40 CFR § 81.305; California Air Resources Board 1997.

Air Quality Planning

Federal Requirements. The federal CAA requires each state to develop, adopt, and implement a state implementation plan (SIP) to achieve, maintain, and enforce federal air quality standards throughout the state. Deadlines for achieving the federal air quality standards vary according to air pollutant and the severity of existing air quality problems. SIP documents are developed on a pollutant-by-pollutant basis whenever one or more air quality standards are being violated. In California, the SIP consists of separate documents for different pollutants in regions of the state. Local councils of governments and air pollution control districts have had the primary responsibility for developing and adopting the regional elements of the California SIP.

Federal Clean Air Act Conformity Process. Section 176(c) of the CAA, USC § 7506(c), requires federal agencies to ensure that actions undertaken in nonattainment or maintenance areas are consistent with the Clean Air Act and with federally enforceable air quality management plans. EPA has promulgated separate rules that establish conformity analysis procedures for transportation-related actions and for other (general) federal agency actions. Transportation conformity requirements apply to highway and mass transit projects funded or approved by the Federal Highway Administration (FHWA) or the Federal Transit Administration (FTA). General conformity requirements are potentially applicable to most other federal agency actions but apply only to those aspects of

an action that involve ongoing federal agency responsibility and control over direct or indirect sources of air pollutant emissions. The EPA conformity rules have been adopted verbatim by most air pollution control districts.

The EPA general conformity rule applies to federal actions occurring in nonattainment or maintenance areas when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. The emission thresholds that trigger requirements of the conformity rule are called de minimis levels.

Table 3-25 identifies the federal nonattainment pollutants and the relevant de minimis emission thresholds for each of the alternative receiving installations considered for the F/A-18E/F squadrons. Also shown in Table 3-24 are the deadlines for achieving the federal air quality standards. NAS Lemoore and NAF El Centro are in areas that are nonattainment for the federal ozone and PM_{10} standards.

Table 3-25
Nonattainment Pollutants and De Minimis Levels for West Coast Sites

Installation	Air District Jurisdiction	Federal Nonattainment Pollutants	De Minimis Levels[1] (Tons/Year)	Precursors	Attainment Deadline
NAS Lemoore	San Joaquin Valley Unified APCD	Ozone - Serious	50	ROG, NO_x	1999
		PM_{10} - Serious	70	PM_{10}, ROG, NO_x, SO_x	2001
NAF El Centro	Imperial County APCD	Ozone - Transitional [2]	100	ROG, NO_x	NA
		PM_{10} – Moderate[3]	100	PM_{10}, ROG, NO_x, SO_x	1994+

Notes: APCD = Air Pollution Control District
AQMD = Air Quality Management District
ROG = reactive organic compounds
NO_x = oxides of nitrogen
SO_x = oxides of sulfur
PM_{10} = inhalable particulate matter
CO = carbon monoxide
NA = not applicable

[1]De Minimis thresholds apply to individual pollutants and precursors, not to the combination of precursors.
[2]Transitional ozone nonattainment areas are defined by Section 185A of the Clean Air Act as nonattainment areas having no violations of the ozone standard between 1987 and 1990. Transitional areas were to be redesignated as attainment/maintenance or as the appropriate nonattainment category by June 1992. 40 CFR § 81.305 still shows Imperial County as having a nonattainment - transitional designation for ozone.
[3]Moderate PM_{10} nonattainment areas that failed to reach attainment within Clean Air Act deadlines are reclassified by operation of law as serious nonattainment areas (Clean Air Act, USC § 188(b)(2)(A)). 40 CFR § 81.305 still shows Imperial County as having a nonattainment - moderate designation for PM_{10}.

Sources: 40 CFR § 81.305; 40 CFR § 93.153; 42 USC §§ 7401 *et seq.*; California Air Resources Board 1997.

The EPA conformity rule establishes a process that is intended to demonstrate that the proposed federal action

- Would be consistent with plans for achieving federal air quality standards;

- Would not cause or contribute to new violations of federal air quality standards;
- Would not increase the frequency or severity of existing violations of federal air quality standards; and
- Would not delay the timely attainment of federal air quality standards.

Compliance with the conformity rule can be demonstrated in several ways. Compliance is presumed if the net increase in direct and indirect emissions from a federal action would be less than the relevant de minimis level.

If net emissions exceed the relevant de minimis value, a formal conformity determination process must be followed. A conformity determination includes a demonstration of consistency with the SIP through one of the following mechanisms:

- By showing that direct and indirect emissions from the activity are specifically identified and accounted for in the SIP;
- By showing that direct and indirect emissions associated with the federal agency action are accommodated within emissions allowances contained in an approved SIP;
- By showing that emissions associated with future conditions will not exceed emissions that would occur from a continuation of historical activity levels;
- By arranging emission offsets to fully compensate for the net emissions increase associated with the action; or
- By obtaining a commitment from the relevant air quality management agency to amend the SIP to account for direct and indirect emissions from the federal agency action.

State Requirements. The California Clean Air Act (CCCA) of 1988 requires air pollution control districts and air quality management districts to develop air quality management plans for meeting state ambient air quality standards for ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide. CARB is responsible for developing a plan for meeting state PM_{10} standards.

The CCCA does not set specific deadlines for achieving state air quality standards. Instead, attainment is required as expeditiously as practicable, with various emission control program requirements based on the attainment status for ozone and carbon monoxide standards.

California ambient air quality standards (CAAQs) generally are somewhat more stringent than the comparable federal standards. The greatest difference between federal and state ambient air quality standards is for PM_{10}.

3.6.1 NAS Lemoore Alternative

Affected Area

The affected area for NAS Lemoore varies according to the type of air pollutant being discussed. Primary pollutants, such as carbon monoxide, have a localized affected area that is generally limited to less than 2,000 feet (610 m) from the source of the emissions. The time required for the formation of secondary pollutants, such as ozone and secondary particulate matter, allows precursor emissions to be transported and mixed over relatively large areas while being converted into the pollutant of concern. Consequently, the affected area for secondary pollutants includes all of the San Joaquin Valley air basin.

Air Quality Conditions

Table 3-26 summarizes air quality monitoring data for the NAS Lemoore vicinity. The closest air quality monitoring stations are in the communities of Hanford and Visalia. The entire San Joaquin Valley, including the NAS Lemoore vicinity, is designated a serious nonattainment area for the federal ozone standard and a serious nonattainment area for the federal PM_{10} standard. Ozone concentrations recorded in Hanford are lower than those recorded at monitoring stations in adjacent counties.

Emission sources at NAS Lemoore include various stationary sources, aircraft flight activity, and motor vehicle use. Stationary sources include aircraft engine test cells, portable engines for generators and compressors, fuel storage and handling facilities, boilers, solvent and coating use from aircraft maintenance operations, and gasoline stations.

Emission forecasts contained in the ozone SIP (1995 revision) assume that aircraft emissions from NAS Lemoore would increase by 14.6 tons per year for reactive organic compounds and by 65.7 tons per year for nitrogen oxides between 1990 and 1996, with emissions holding constant beyond 1996 (San Joaquin Valley Unified Air Pollution Control District 1995). The emission forecasts in the ozone SIP adjust emission sources for expected regional population growth, but do not specifically identify the portion attributable to expansion of NAS Lemoore.

As part of a previous realignment action for NAS Lemoore, a portion of the emission reductions that occurred with closure of Castle Air Force Base were transferred to NAS Lemoore to support a CAA conformity determination. Because the previously proposed realignment action did not take place, the conformity-related emission offsets (100 tons [91 metric tons] per year of reactive

Table 3-26
Air Quality Monitoring Data for the NAS Lemoore Vicinity (1991-1995)

Monitoring Station	Air Quality Indicator	1991	1992	1993	1994	1995
Ozone						
Hanford – Health Dept.	Peak 1-hour value (ppm)	0.11	0.10	0.11		
	Days above federal standard (0.12 ppm)	0	0	0		
	Days above state standard (0.09 ppm)	15	1	2		
Hanford - S. Irwin	Peak 1-hour value (ppm)				0.12	0.10
	Days above federal standard (0.12 ppm)				0	0
	Days above state standard (0.09 ppm)				9	2
Carbon Monoxide						
Visalia – Church St.	Peak 1-hour value (ppm)	14	10	7	9	9
	Peak 8-hour value (ppm)	6.1	4.8	4.0	4.6	4.4
	Days above federal standard (9 ppm)	0	0	0	0	0
	Days above state standard (9.0 ppm)	0	0	0	0	0
PM_{10}						
Hanford – Health Dept.	Peak 24-hour value ($\mu g/m^3$)	164	147	67		
	Annual geometric mean ($\mu g/m^3$)	55.0	48.6	31.4		
	Annual arithmetic mean ($\mu g/m^3$)	70.0	55.9	36.3		
	Number of 24-hour samples	56	57	38		
	% of samples above federal standard (150 $\mu g/m^3$)	5.4%	0.0%	0.0%		
	% of samples above state standard (50 $\mu g/m^3$)	53.6%	43.9%	28.9%		
Hanford - S. Irwin	Peak 24-hour value ($\mu g/m^3$)			192	116	185
	Annual geometric mean ($\mu g/m^3$)			69.8	44.3	43.6
	Annual arithmetic mean ($\mu g/m^3$)			85.9	50.1	53.8
	Number of 24-hour samples			9	55	59
	% of samples above federal standard (150 $\mu g/m^3$)			11.1%	0.0%	1.7%
	% of samples above state standard (50 $\mu g/m^3$)			66.7%	47.3%	42.4%

Notes: ppm = parts per million by volume
$\mu g/m^3$ = micrograms per cubic meter
Federal 1-hour ozone standard is 0.12 ppm; state 1-hour ozone standard is 0.09 ppm
Federal 1-hour carbon monoxide standard is 35 ppm; state 1-hour carbon monoxide standard is 20 ppm
Federal 8-hour carbon monoxide standard is 9 ppm; state 8-hour carbon monoxide standard is 9.0 ppm
Federal PM_{10} standards: 50 $\mu g/m^3$, annual arithmetic mean; 150 ug/m^3, 24-hour average
State PM_{10} standards: 30 $\mu g/m^3$, annual geometric mean; 50 ug/m^3, 24-hour average
24-hour PM_{10} samples are collected approximately once every six days. Other pollutants are monitored continuously (except for instrument calibration and maintenance periods)

Source: California Air Resources Board 1995.

organic compounds, 367.1 tons [333 metric tons] per year of nitrogen oxides, and 151.6 tons [138 metric tons] per year of PM_{10}) could be used to support the CAA conformity determination process for the F/A-18E/F action at NAS Lemoore.

3.6.2 NAF El Centro Alternative

Affected Area

The affected area for NAF El Centro varies according to the type of air pollutant being discussed. Primary pollutants, such as carbon monoxide, have a localized affected area that is generally limited to less than 2,000 feet (610 m) from the

source of the emissions. The time required for the formation of secondary pollutants, such as ozone and secondary particulate matter, allow precursor emissions to be transported and mixed over relatively large areas while being converted into the pollutant of concern. Consequently, the affected area for secondary pollutants includes all of the Salton Sea Air Basin.

Air Quality Conditions

Table 3-27 summarizes air quality monitoring data for the NAF El Centro vicinity. Imperial County is designated a transitional nonattainment area for the federal ozone standard and a moderate nonattainment area for the federal PM_{10} standard. Ozone levels in Imperial County are due in part to pollutant transport from other portions of Southern California and from Mexico.

Emission sources at NAF El Centro include various stationary sources, aircraft flight activity, and motor vehicle use. Stationary sources include portable engines for generators and compressors, fuel storage and handling facilities, boilers, and solvents and coatings used for aircraft maintenance operations. The 1997 ozone SIP emission forecasts have not anticipated any change in activity levels for NAF El Centro.

Table 3-27
Air Quality Monitoring Data for the NAF El Centro Vicinity (1991-1995)

Monitoring Station	Air Quality Indicator	1991	1992	1993	1994	1995
Ozone						
El Centro - 9th St.	Peak 1-hour value (ppm)	0.11	0.12	0.15	0.13	0.15
	Days above federal standard (0.12 ppm)	0	0	3	1	9
	Days above state standard (0.09 ppm)	3	10	25	29	31
PM_{10}						
El Centro - 9th St.	Peak 24-hour value ($\mu g/m^3$)	243	80	166	119	130
	Annual geometric mean ($\mu g/m^3$)	50.3	38.5	42.5	40.3	36.7
	Annual arithmetic mean ($\mu g/m^3$)	36.6	41.4	48.0	45.3	41.5
	Number of 24-hour samples	62	46	53	57	60
	% of samples above federal standard (150 $\mu g/m^3$)	1.6%	0.0%	1.9%	0.0%	0.0%
	% of samples above state standard (50 $\mu g/m^3$)	50.0%	30.4%	39.6%	29.8%	25.0%

Notes: ppm = parts per million by volume
$\mu g/m^3$ = micrograms per cubic meter
Federal 1-hour ozone standard is 0.12 ppm; state 1-hour ozone standard is 0.09 ppm
Federal 1-hour carbon monoxide standard is 35 ppm; state 1-hour carbon monoxide standard is 20 ppm
Federal 8-hour carbon monoxide standard is 9 ppm; state 8-hour carbon monoxide standard is 9.0 ppm
Federal PM_{10} standards: 50 $\mu g/m^3$, annual arithmetic mean; 150 ug/m^3, 24-hour average
State PM_{10} standards: 30 $\mu g/m^3$, annual geometric mean; 50 ug/m^3, 24-hour average
24-hour PM_{10} samples are collected approximately once every six days. Other pollutants are monitored continuously (except for instrument calibration and maintenance periods)

Source: California Air Resources Board 1995.

3.7 NOISE

Definition of Resource

Sound travels through the air as waves of small pressure fluctuations caused by some type of vibration. In general, sound waves travel away from the noise source as an expanding spherical surface. The energy contained in a sound wave is consequently spread over an increasing area as it travels away from the source. This results in a decrease in loudness at greater distances from the noise source.

Sound level meters measure the actual air pressure fluctuations caused by sound waves, with separate measurements made for different vibrational frequency ranges. These measurements are reported using a decibel (dB) scale. Decibel scales are a logarithmic index based on a ratio of the actual pressure fluctuations generated by sound waves compared to a standard reference pressure value.

Noise Terminology

Most sounds consist of a broad range of sound frequencies. Because the human ear is not equally sensitive to all frequencies, a large number of frequency weighting schemes have been used to develop composite decibel scales that approximate the way the human ear responds to noise levels. The "A-weighted" decibel scale (dBA) is the most widely used for this purpose. The A-weighted scale significantly reduces the measured pressure level for low frequency sounds while slightly increasing the measured pressure level for some high frequency sounds.

Varying noise levels are often described in terms of the equivalent constant decibel level. Equivalent noise levels (Leq) are used to develop single-value descriptions of average noise exposure over various periods of time. Such average noise exposure ratings often include additional weighting factors for potential annoyance due to time of day or other considerations. The Leq data used for these average noise exposure descriptors are generally based on A-weighted sound level measurements.

Average noise exposure over a 24-hour period is often presented as a day-night average sound level (L_{dn}) or as a community noise equivalent level (CNEL). L_{dn} values are calculated from hourly Leq values, with the Leq values for the nighttime period (10 PM to 7 AM) increased by 10 dB to reflect the greater disturbance potential from nighttime noises. CNEL values are very similar to L_{dn} values but include a 5 dB annoyance adjustment for evening (7 PM to 10 PM) Leq values in addition to the 10 dB adjustment for nighttime Leq values. Unless specifically noted otherwise, L_{dn} and CNEL values are assumed to be based on dBA measurements. Because CNEL and L_{dn} values for the same noise condition seldom differ by more than 1 db, they often are used interchangeably when interpreting noise level criteria and standards.

Working With Decibel Values

The nature of dB scales is such that numerical dB ratings for different noise sources cannot be added directly to give the dB rating of the combination of these sources.

Decibel values must be converted into their energy or pressure equivalents before being added or averaged. For simplicity, the procedure for combining decibel values is often referred to as "energy averaging." Some of the more important consequences of decibel manipulations are discussed in the following paragraphs.

The calculation procedure used for computing Leq values results in high dB events contributing significantly more to the final Leq value than do background low dB conditions. For example, a single 1-second episode of a 90 dBA introduced into a 1-hour constant background noise condition of 45 dBA results in a 1-hour Leq value of 54.9 dBA. Even in the context of 24-hour averages, brief noise events have a noticeable effect. A cumulative total of 20 seconds of 90 dBA in a 24-hour background condition of 45 dBA results in a 24-hour Leq of 54.2 dBA.

Similarly, when computing the combined effect of multiple noise sources, the loudest noise source will dominate the composite noise level. When two noise sources differ by 10 dB, the composite noise level will be only 0.4 dB greater than the louder source alone. Two noise sources producing equal dB ratings at a given location will produce a composite noise level 3 dB greater than either sound alone. When dealing with large numbers of similar noise sources, doubling the number of equivalent noise sources will produce a composite noise level 3 dB higher than the previous composite noise level.

Subjective reactions to noise level changes reflect a logarithmic response to decibel changes. In general, a 10 dB increase in noise level is perceived as a doubling (100 percent increase) in loudness. A 2 dB increase represents a 15 percent increase in loudness, a 3 dB increase is a 23 percent increase in loudness, and a 5 dB increase is a 41 percent increase in loudness. Conversely, a 2 dB reduction represents a 13 percent decrease in loudness, a 3 dB reduction represents a 19 percent decrease in loudness, a 5 dB reduction represents a 29 percent decrease in loudness, and a 10 dB reduction represents a 50 percent decrease in loudness. Even in a laboratory setting, most people have difficulty distinguishing the louder of two noise sources that differ by less than 1.5 to 2 dB.

When distance is the only factor considered, sound levels from an isolated noise source would be expected to decrease by about 6 dB for every doubling of distance away from the noise source. When the noise source is essentially a continuous line (e.g., vehicle traffic on a highway), noise levels would be expected to decrease by about 3 dB for every doubling of distance, due to the additive effects of a linear array of noise sources.

Sound levels at various locations away from a noise source are influenced by factors other than just distance from the noise source. Ground surface conditions, topographic features, and structural barriers can absorb, reflect, or scatter sound waves, resulting in lower noise levels (increased sound attenuation rates). Also affecting sound attenuation rates are atmospheric conditions (wind speed and direction, humidity levels, temperature, and air pressure) and the frequency

characteristics of the sound itself. The atmosphere absorbs some of the energy content of sound waves, thus increasing sound attenuation rates over long distances.

Noise Level Criteria and Standards

Various federal, state, and local agencies have developed guidelines for evaluating land use compatibility under different noise level ranges. Residential, educational, religious, and health care land uses are generally recognized as being noise-sensitive.

Federal Agency Guidelines. The federal Noise Control Act of 1972 (42 USC § 4901 *et seq.* [1994]) established a requirement that all federal agencies must comply with applicable federal, state, interstate, and local noise control regulations. Local and state agencies have no applicable authority over military aircraft operations. Federal agencies also were directed to administer their programs in a manner that promotes an environment free from noise that jeopardized public health or welfare. The recently issued Executive Order 13045 (EO 13045, 62 Federal Register 19885) establishes a requirement that federal agencies identify, assess, and address the extent to which agency programs and activities create disproportionate environmental health and safety risks for children.

Noise levels on military bases generally are evaluated as part of installation compatible use zone studies. When military airfields are present, these studies are called air installation compatible use zone (AICUZ) studies. An AICUZ study categorizes different portions of the installation for both noise exposure conditions and safety hazard conditions. Safety hazard conditions are indicated as accident potential zones (discussed in Section 3.3). Noise levels are mapped according to three general noise exposure zones:

- Zone 1: areas exposed to CNEL levels below 65 dB;
- Zone 2: areas exposed to CNEL levels of 65 to 75 dB; and
- Zone 3: areas exposed to CNEL levels above 75 dB.

Noise exposure zones identified in AICUZ studies generally represent "average busy day" activity levels. Annual average activity levels are used when airfields are operating at capacity.

All on-base land uses are compatible with Zone 1 noise levels. Industrial, administrative, and personnel support uses generally are compatible with Zone 2 noise levels. Educational and residential land uses generally are not compatible with Zone 2 noise levels unless special acoustic treatments and designs are used to ensure acceptable interior noise levels. Administrative, residential, and personnel support land uses are not compatible with Zone 3 noise levels. Industrial and manufacturing land uses may be acceptable in Zone 3 areas if special building designs and other measures are implemented.

State Agency Guidelines. State noise standards and guidelines include airport noise standards, guidelines for noise elements of general plans, and noise insulation standards for hotels, motels, and new multiple unit residential developments.

The California Department of Aeronautics has adopted airport noise standards (CCR tit. 21, § 5012) that define an airport noise impact zone as the area within the 65 dB CNEL contour around an airport. Constructing new noise-sensitive land uses (public and private schools, hospitals, convalescent homes, places of worship, and residences) is prohibited or discouraged within the noise impact zone around an airport.

The California Department of Health Services (1987) has published guidelines for the noise element of local general plans. These guidelines include a noise level/land use compatibility chart that categorizes outdoor CNEL or L_{dn} levels into the four compatibility categories of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable, depending on land use.

The chart in the state noise element guidelines identifies normally acceptable noise levels for low density residential uses as CNEL values below 60 dB. The normally acceptable range for high density residential uses is identified as CNEL values below 65 dB. For educational and medical facilities, CNEL values of 60 to 70 dB are identified as conditionally acceptable. For office and commercial land uses, CNEL values of 67.5 to 77.5 are categorized as conditionally acceptable. Local cities and counties are free to adopt different land use compatibility guidelines as part of the noise element of their general plan.

The California Department of Housing and Community Development has adopted noise insulation performance standards for new hotels, motels, and dwellings other than detached single-family structures. These standards (CCR tit. 24, part 6, § T25-28) require that hotels, motels, and multiple unit dwellings be constructed so that outdoor noise sources will not cause interior noise levels to exceed an annual average CNEL value of 45 dB with the windows closed.

Local Guidelines and Criteria. Cities and counties in California are required to adopt noise elements as part of the local general plan. Noise elements identify existing and anticipated noise problems, programs to remedy these problems when feasible, and programs to minimize the creation of future noise problems. Some cities and counties also adopt noise ordinances to establish limitations and enforcement procedures for various categories of fixed noise sources. State and federal law preempts most direct local regulation of noise from motor vehicles, locomotives, ships, and aircraft.

3.7.1 NAS Lemoore Alternative

Affected Area

The decrease in noise levels with increasing distance away from the noise source results in a fairly limited area affected by noise. The affected area for fixed site noise sources (such as industrial equipment or construction sites) is generally less than half a mile (0.8 km) from the site. The affected area for aircraft noise is generally within 3 miles (5 km) of the airfield or along major flight track corridors where flight altitudes will be within 10,000 feet (3,050 m) of ground level. The affected area for highway traffic noise sources is generally less than 1,000 feet (305 m) from roadways experiencing significant changes in traffic volumes.

Local Community Noise Level Criteria

Aircraft operations from NAS Lemoore, crop dusting operations, and highway traffic are the major contributors to noise conditions in Kings County. NAS Lemoore is the major airfield in Kings County. Hanford Municipal Airport and Corcoran Airport are minor sources of aircraft noise. State routes 198 and 41 are the major state highways near NAS Lemoore.

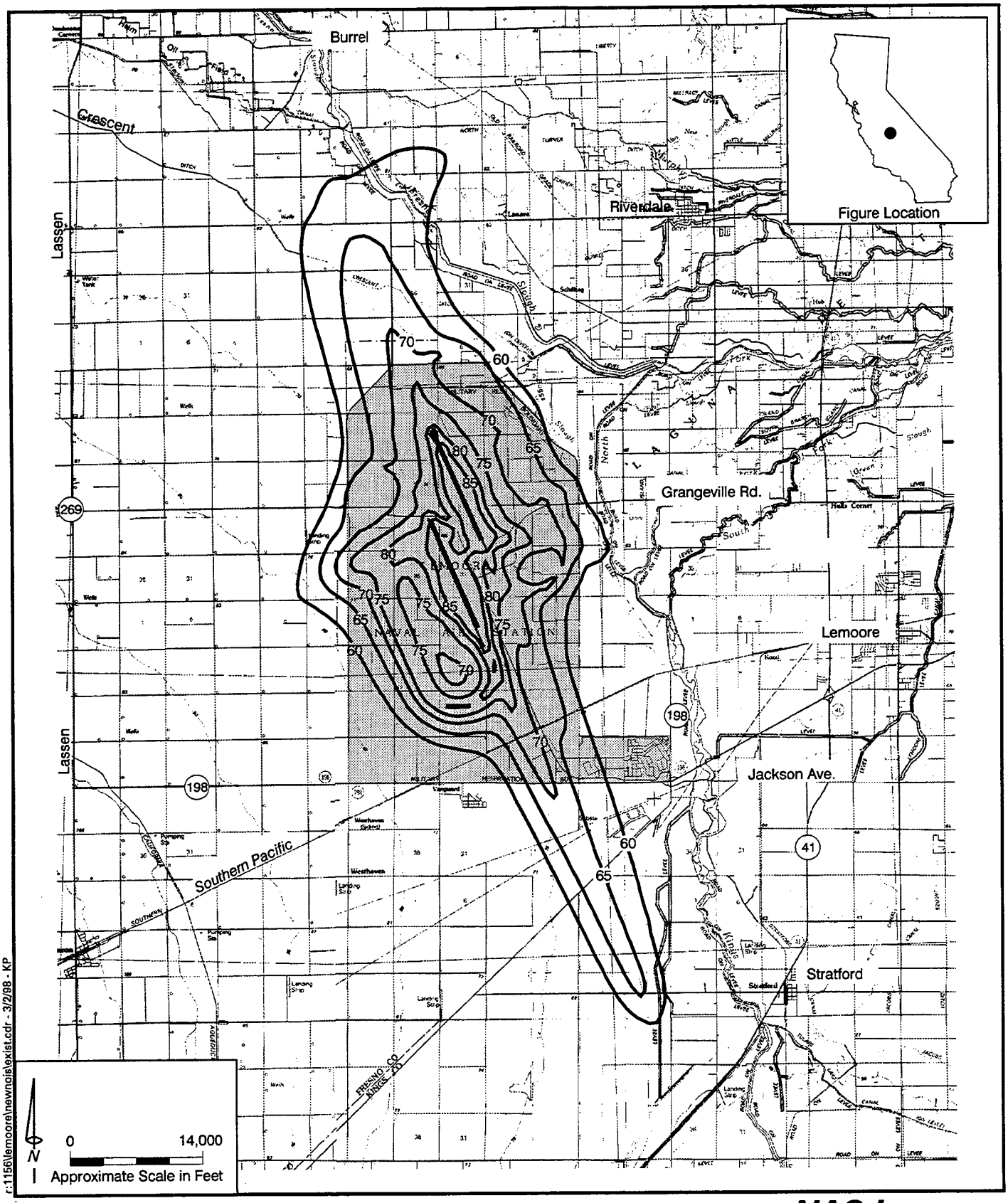
The noise element of the Kings County general plan sets a CNEL level of 60 dB as the marginally acceptable limit for residential and other noise-sensitive land uses. The Kings County general plan discourages development of any sort within 3 miles (5 km) of NAS Lemoore.

The noise element of the Fresno County general plan uses an L_{dn} of 60 dB to define noise-impacted land uses. In addition, the noise element of the Fresno County general plan uses a median noise level measure (L_{50}, or the noise level exceeded 50 percent of the time) measure to identify general land use compatibility conditions. An L_{50} of 50 dBA is the acceptable noise limit for rural residential development, while an L_{50} of 55 dBA is identified as the acceptable limit for urban residential and other noise-sensitive land uses.

Existing Airfield Noise

Figure 3-20 illustrates 1997 aircraft noise conditions around the airfield at NAS Lemoore. The 65 dB CNEL contour encompasses about 34,250 acres (13,700 ha), mostly within NAS Lemoore boundaries. The dB 65 CNEL contour extends off-base along major approach and departure flight paths.

On-base land uses at NAS Lemoore are separated into an operations area, an administrative area, and a housing area. Some bachelor housing facilities are in the administrative area. Some portions of the administrative area, including BEQ and BOQ facilities, fall within the 65 dB CNEL contour (Zone 2). Family housing areas and on-base schools generally are exposed to CNEL conditions below 60 dB. The AICUZ study recommends building design and acoustic insulation measures to achieve acceptable interior noise levels for buildings within the 65 dB contour.



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The 65-dB CNEL contour extends off-base along major approach and departure flight paths.

LEGEND:

— 75 — Community Noise Equivalent Level (CNEL)

NAS Lemoore

NAS Lemoore
Existing Noise Contours

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: Wyle 1997.

Figure 3-20

NAS Lemoore is surrounded by agricultural land uses. The closest residential developments are in Lemoore (7 miles east), Stratford (6 miles southeast), and Hanford (17 miles east). Noise complaints from off-base areas are generally infrequent, averaging about 7 per year (US Navy 1993b).

Existing Traffic Noise

Table 3-28 summarizes traffic noise levels along off-base major roadways near NAS Lemoore. The highest traffic noise levels occur along SR-198. Any noise-sensitive developments along major roadways in Kings and Fresno counties are required to use setbacks, perimeter walls, or other measures to mitigate noise exposure conditions.

Table 3-28
Existing Traffic Noise Levels Near NAS Lemoore

Location	CNEL at 100 feet to C/L (dBA)	Distance to 65 dB CNEL Contour (feet)
Grangeville Road		
West of Highway 41	66.8	130
Highway 41		
North of Grangeville	69.1	190
Highway 198/Jackson Avenue		
Highway 41 – Avenal Cutoff	70.6	240
East of Main Gate	68.3	170
West of Main Gate	65.3	100

Source: Giroux & Associates 1996.

Existing Access Corridors to the R-2508 Airspace Complex

In order to reach the R-2508 Complex, aircraft from NAS Lemoore must fly east over the Sierra, along flight routes between NAS Lemoore and fixed navigation points at the boundary of R-2508 (see figures 3-2 and 3-3 in the Land Use and Airspace section). Navy aircraft typically enter the R-2508 Complex at one of the two primary fix points (Kiote or Swoop) and exit the R-2508 Complex to return to NAS Lemoore from the other fix point. A third fix point (Mitel) located north of the Kiote fix point is used primarily by the Fresno Air National Guard. In addition, the Navy, R-2508 CCB, and Fresno Air National Guard have proposed adding a fourth fix point, Fangg, near the northwestern corner of R-2508. The Fangg fix point is proposed primarily to limit interference between aircraft entering R-2508 at Mitel and Kiote and aircraft already operating within R-2508 and, if approved, would be used by both NAS Lemoore and the Fresno Air National Guard.

Navy aircraft using the Swoop and Kiote corridors normally are flying at 19,000 to 23,000 feet (5,791 to 7,010 m) msl, resulting in overflights that are generally at

least 6,000 feet (1,829 m) AGL. As noted in Section 3.1.1, the FAA recently rejected a Navy request to raise the flight altitude for the Swoop and Kiote corridors to an altitude range of 23,000 to 27,000 feet (7,010 to 8,229 m) msl.

F/A-18 aircraft from NAS Lemoore normally fly these corridors at an air speed of 300 knots (555 kph) in a cruise power setting. Figure 3-21 illustrates a typical flyover event by existing F/A-18C/D aircraft as heard from high ridgelines along the flight corridors between NAS Lemoore and the R-2508 Complex. Existing peak flyover event noise levels are about 71 dBA, which is comparable to the noise generated at 50 feet (15 m) by a two-axle delivery truck traveling at 25 mph (40 kph). Existing NAS Lemoore air traffic along the Swoop and Kiote corridors generates an annual average CNEL level well below 50 dBA (Wyle Laboratories 1998).

Existing Use of the R-2508 Airspace Complex

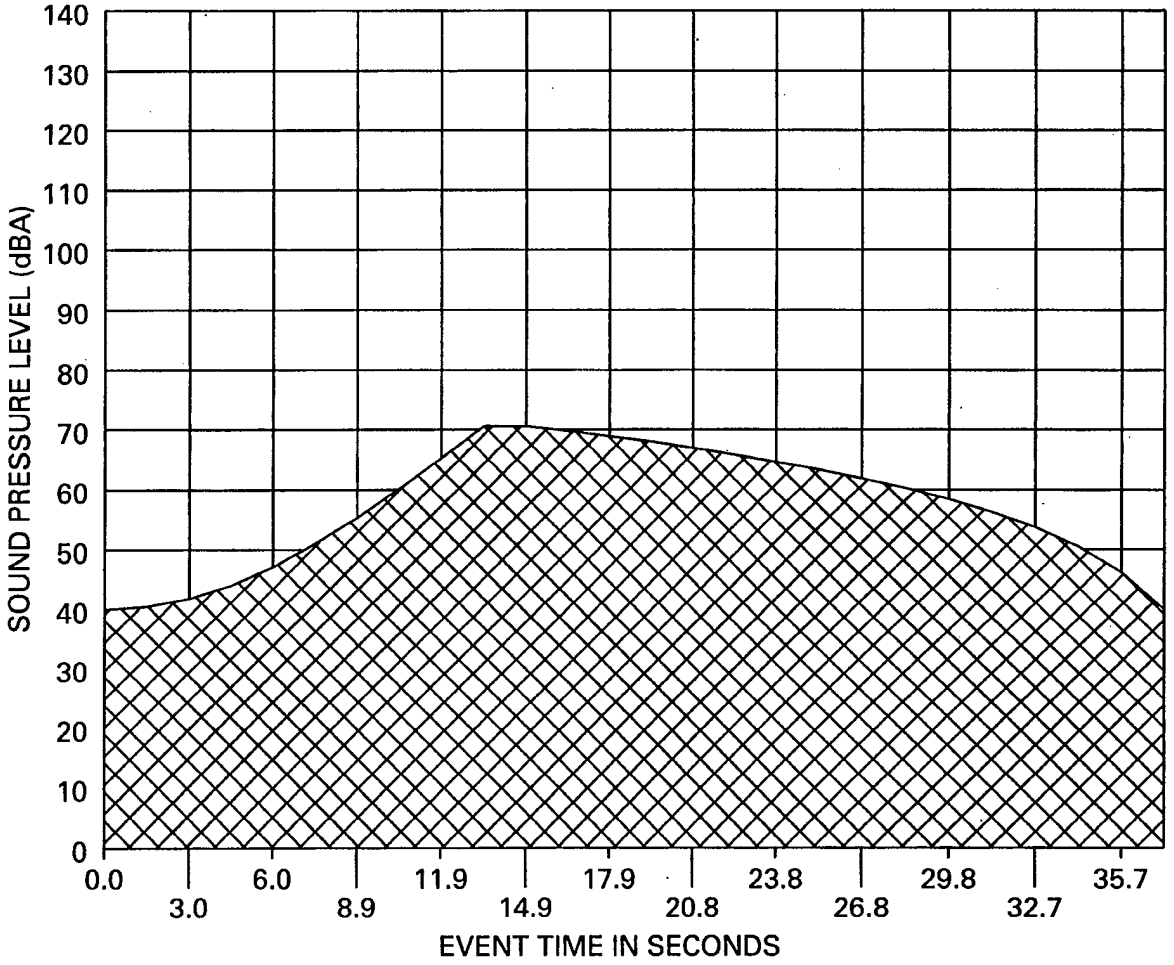
Once the aircraft cross the crest of the Sierra they enter the R-2508 Complex and are mostly over national forest land. Once aircraft enter the R-2508 Airspace Complex, they can begin training activities that result in a wide range of flight altitudes, air speeds, and aircraft power settings. Aircraft are required to maintain flight altitudes of at least 3,000 feet (914 m) AGL when flying over designated noise sensitive areas illustrated in Figure 3-2 (Sequoia and Kings Canyon National Parks, the 1977 boundaries of the former Death Valley National Monument, and the 1977 boundary portion of the Domeland Wilderness).

Variations in flight conditions result in a wide range of potential noise levels near aircraft flight tracks. The highest noise levels will occur at high power settings, high air speeds, and low flight altitudes. Figure 3-22 illustrates typical flyover event noise levels for an F/A-18C/D aircraft flying 3,000 feet (914 m) AGL at 420 knots (777 kph) and full (military) power. The peak noise level under these conditions would be about 105 dBA. Noise levels would increase rapidly over a 4 or 5 second interval during the approach segment of an overflight event and then would diminish gradually after the aircraft passes overhead. Peak noise levels would be higher for flyover events at lower altitudes. Peak noise levels would be about 109 dBA for flyover events at 2,000 feet (609 m) AGL, and about 116 dBA for flyover events at 1,000 feet (304 m) AGL.

Figure 3-23 illustrates typical flyover event noise levels for an F/A-18C/D aircraft flying 3,000 feet (914 m) AGL at 500 knots (925 kph) using afterburners. The peak noise level under these conditions would be about 111 dBA. Noise levels would increase very rapidly over a 3 second interval during the approach segment of an overflight event and then would diminish gradually after the aircraft passes overhead. The rapid increase in noise levels during the approach segment of such an overflight could produce startle reactions for people or animals under the flight path. Peak noise levels would be higher for flyover events at lower altitudes. Peak noise levels would be about 115 dBA for flyover events at 2,000 feet (609 m) AGL, and about 121 dBA for flyover events at 1,000 feet (304 m) AGL.

F/A-18C/D AIRCRAFT FLYOVER NOISE EVENT

CRUISE (85%), 300 KNOTS AT 6,000 FEET



Source: Tetra Tech 1998.

Peak flyover event noise by existing F/A-18C/D aircraft at 85% power, 300 knots air speed, and 6,000 feet above ground level is 71 dBA.

Existing Flyover Noise Event, Kiote/Swoop Corridors

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

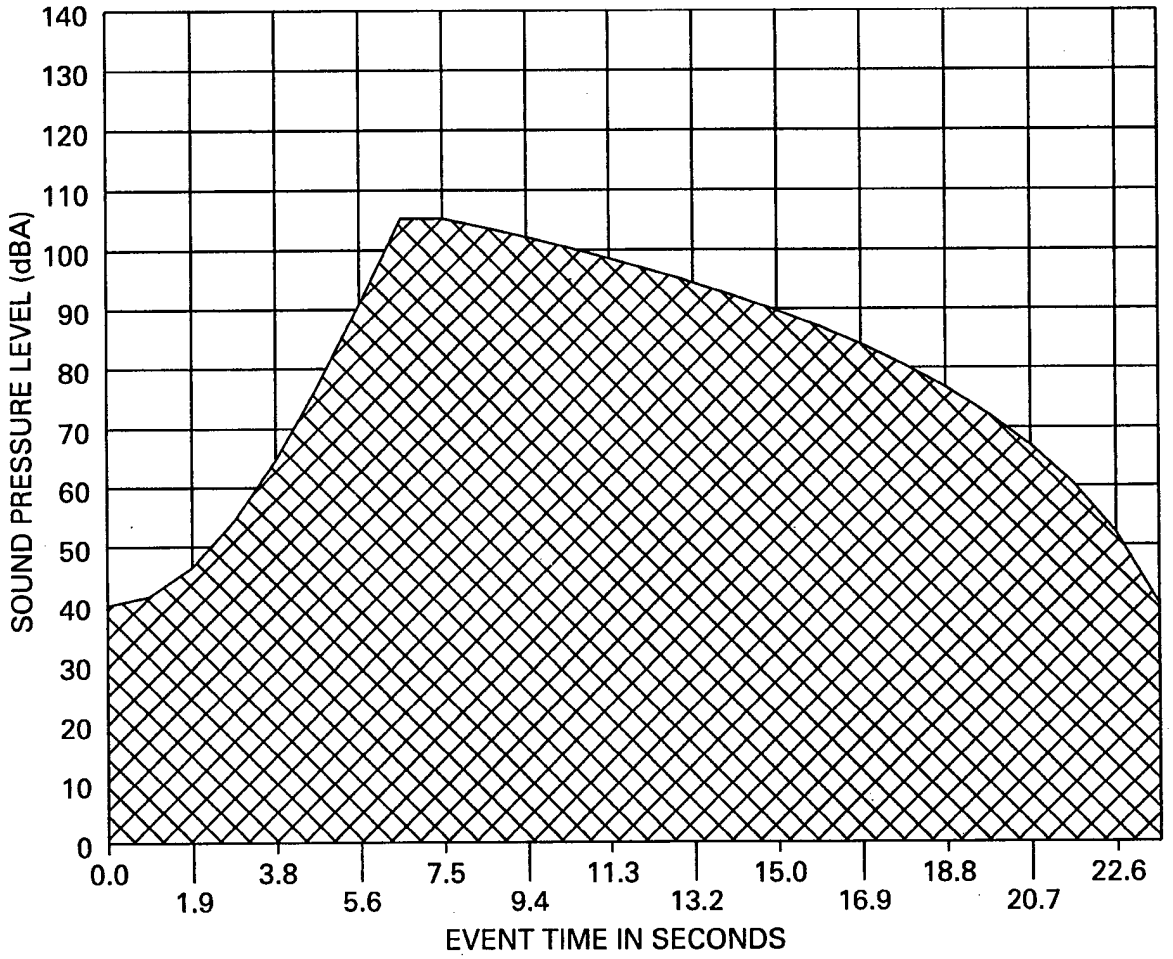
Tetra Tech, Inc.

Figure 3-21

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F/A-18C/D AIRCRAFT FLYOVER NOISE EVENT

MILITARY POWER, 420 KNOTS AT 3,000 FEET



Source: Tetra Tech 1998.

Peak flyover event noise by existing F/A-18C/D aircraft at 101% power, 420 knots air speed, and 3,000 feet above ground level is 105 dBA.

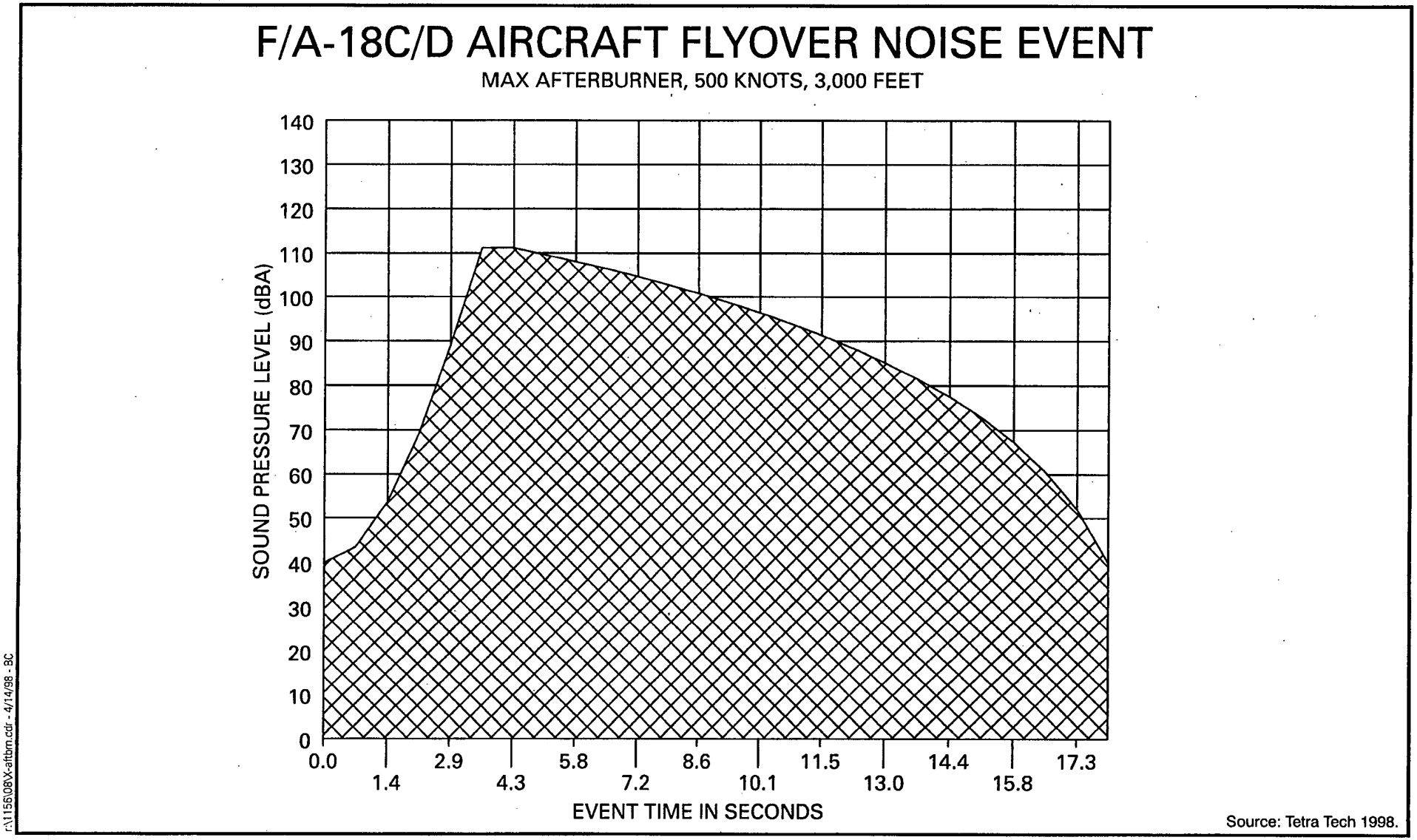
Existing Flyover Noise Event, Military Power in the R-2508 Complex

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Tetra Tech, Inc.

Figure 3-22

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Peak flyover event noise by existing F/A-18C/D aircraft at 101% power with afterburners, 500 knots air speed, and 3,000 feet above ground level is 111 dBA.

Existing Flyover Noise Event, Afterburner Power in the R-2508 Complex

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Tetra Tech, Inc.

Figure 3-23

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Existing Use of Military Training Routes

As noted in Section 3.1, aircraft from NAS Lemoore use a number of low altitude military training routes. All but one of these routes avoid noise sensitive resource areas. The VR-1257 low-altitude military training route passes over portions of Joshua Tree National Park and Anza-Borrego Desert State Park. As indicated in Figure 3-3, VR-1257 begins near Lopez Point on the California coast, crosses the Salinas Valley south of King City, and follows a route along the San Andreas rift zone into southern California. The VR-1257 corridor continues eastward into the southern end of the Lucerne Valley, south to Joshua Tree National Park, through Joshua Tree National Park, westward near the north end of the Salton Sea, and southward through Anza Borrego Desert State Park into training ranges northwest of NAF El Centro.

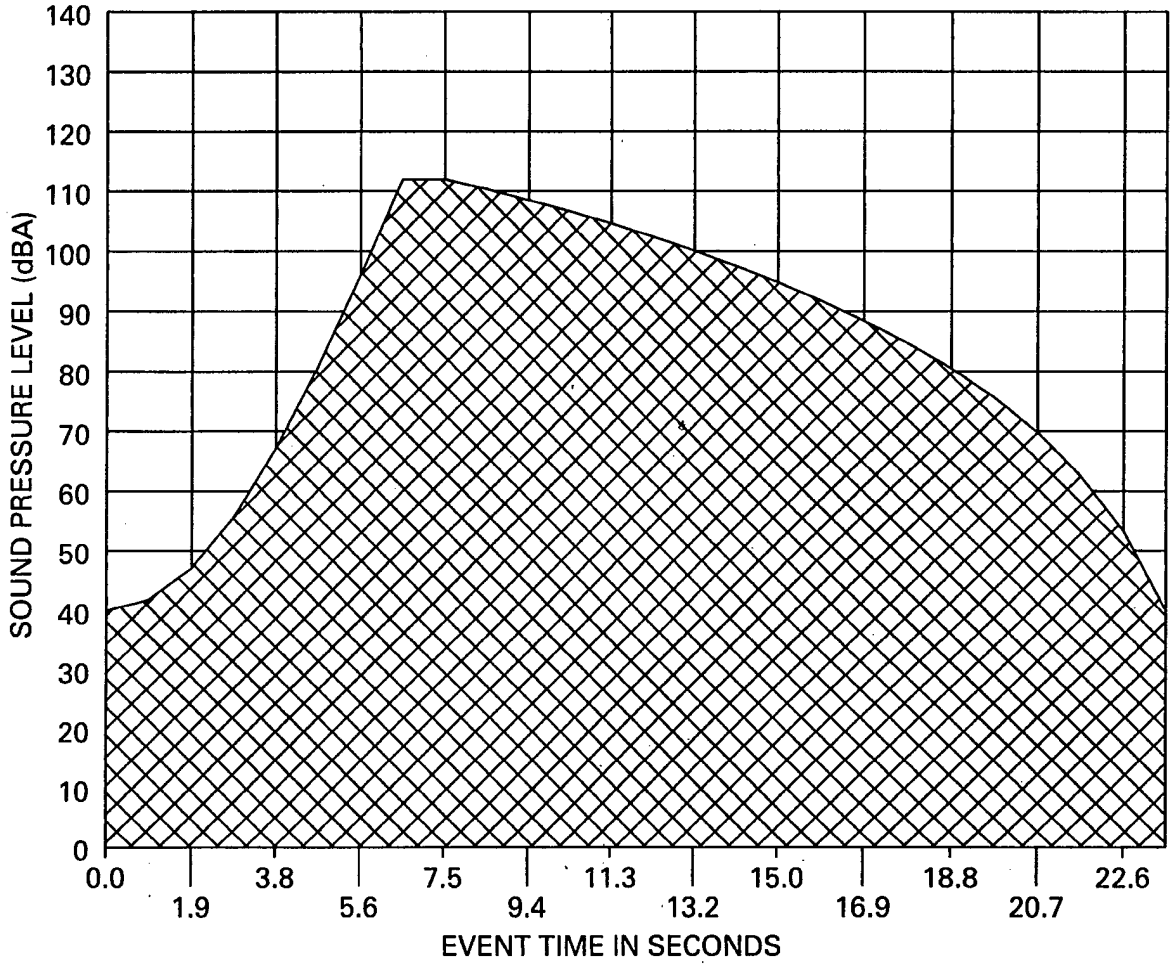
To avoid conflicts with other FAA-designated flight corridors, aircraft using VR-1257 are required to fly below an altitude ceiling of 1,500 feet (457 m) AGL. Various portions of the corridor normally are flown at altitudes of 400 feet (122 m) AGL, 1,000 feet (304 m) AGL, or 1,500 feet (457 m) AGL. The portion of the VR-1257 corridor that crosses Joshua Tree National Park is flown at the maximum allowable altitude of 1,500 feet (457 m) AGL.

Current use of the VR-1257 corridor is relatively low. There were 164 aircraft sorties flown along the VR-1257 corridor during 1997, with 87 of those sorties being flown by F/A-18C/D aircraft. The low annual use of VR-1257 results in annual average CNEL noise levels of 55 dBA for those portions of the route flown at 400 feet (122 m) AGL and annual average CNEL levels of less than 50 dBA for those portions of the corridor flown at altitudes of 1,000 or 1,500 feet (305 or 457 m) AGL (Wyle Laboratories 1998).

Individual overflights along the VR-1257 corridor produce brief episodes of very high noise levels. Figure 3-24 illustrates typical flyover event noise levels for an F/A-18C/D aircraft flying 400 feet (122 m) AGL at 420 knots (777 kph) and 92 percent power. The peak noise level under these conditions would be about 112 dBA. Figure 3-25 illustrates typical flyover noise levels for an F/A-18C/D aircraft flying 1,000 feet (305 m) AGL at 420 knots (777 kph) and 92 percent power. The peak noise level under these conditions would be about 104 dBA. Figure 3-26 illustrates typical flyover noise levels for an F/A-18C/D aircraft flying 1,500 feet (457 m) AGL at 420 knots (777 kph) and 92 percent power. The peak noise level under these conditions would be about 100 dBA. In all cases, noise levels would increase rapidly over a 4 or 5 second interval during the approach segment of an overflight and then diminish gradually after the aircraft passes overhead.

F/A-18C/D AIRCRAFT FLYOVER NOISE EVENT

VR-1257 SORTIE, 420 KNOTS AT 400 FEET



Source: Tetra Tech 1998.

Peak flyover event noise by existing F/A-18C/D aircraft at 92% power, 420 knots air speed, and 400 feet above ground level is 112 dBA.

Existing Flyover Noise Event, Military Power at 400 Feet in the VR-1257 MTR

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

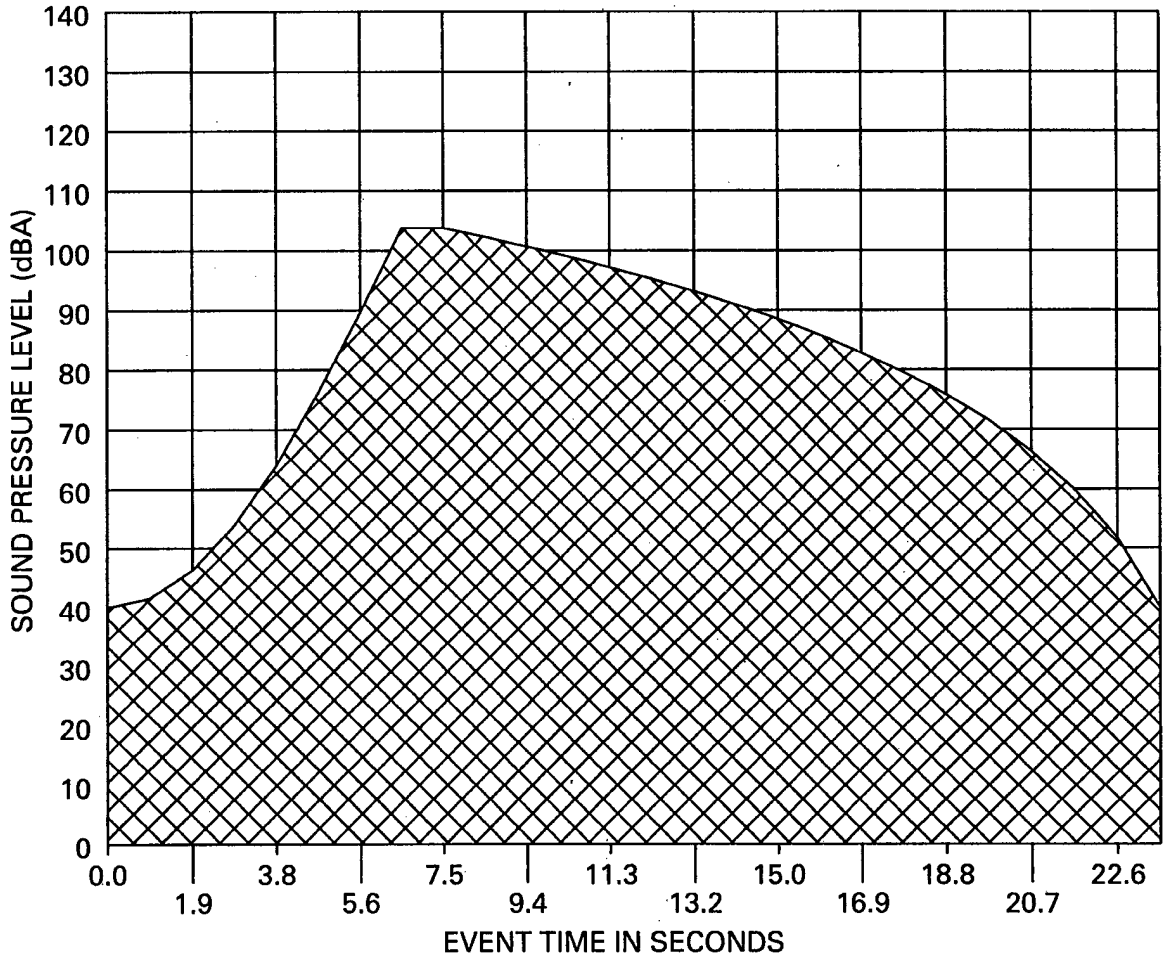
Tetra Tech, Inc.

Figure 3-24

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F/A-18C/D AIRCRAFT FLYOVER NOISE EVENT

VR-1257 SORTIE, 420 KNOTS, 1,000 FEET



Source: Tetra Tech 1998.

Peak flyover event noise by existing F/A-18C/D aircraft at 92% power, 420 knots air speed, and 1000 feet above ground level is 104 dBA.

Existing Flyover Noise Event, Military Power at 1,000 Feet in the VR-1257 MTR

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

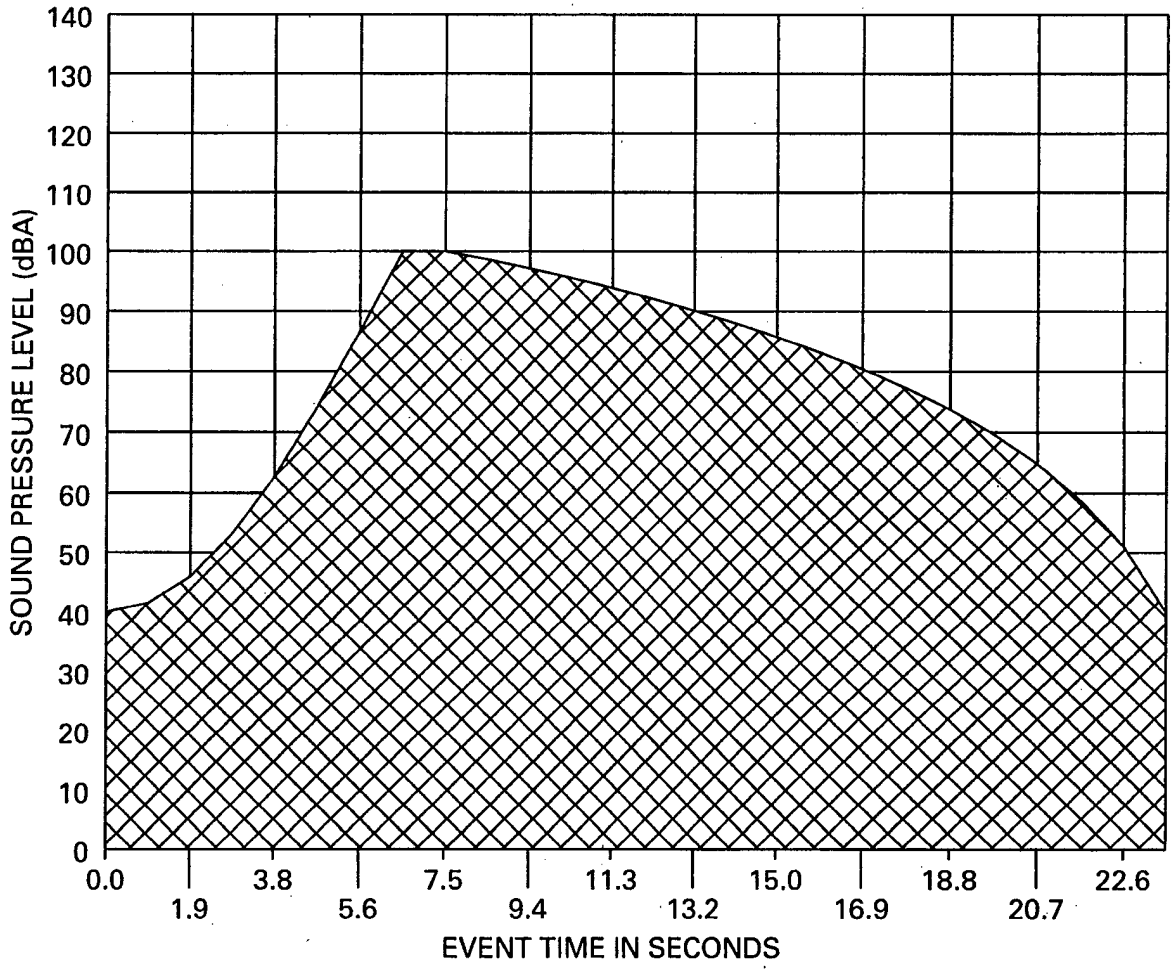
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Tetra Tech, Inc.

Figure 3-25

F/A-18C/D AIRCRAFT FLYOVER NOISE EVENT

VR-1257 SORTIE, 420 KNOTS AT 1,500 FEET



Source: Tetra Tech 1998.

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Peak flyover event noise by existing F/A-18C/D aircraft at 92% power, 420 knots air speed, and 1500 feet above ground level is 100 dBA.

Existing Flyover Noise Event, Military Power at 1,500 Feet in the VR-1257 MTR

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

3.7.2 NAF El Centro Alternative

Affected Area

The decrease in noise levels with increasing distance away from the noise source results in a fairly limited area affected by noise. The affected area for fixed site noise sources, such as industrial equipment or construction sites, is generally less than half a mile (0.8 km) from the site. The affected area for aircraft noise is generally within 3 miles (5 km) of the airfield or along major flight track corridors where flight altitudes will be within 10,000 feet (3,050 m) of ground level. The affected area for highway traffic noise sources is generally less than 1,000 feet (305 m) from roadways experiencing significant changes in traffic volumes.

Local Community Noise Level Criteria

Aircraft operations associated with NAF El Centro and adjacent MOAs are major contributors to noise conditions in the southern part of Imperial County. Additional aircraft noise is contributed by crop dusting activity and aircraft operations from Imperial County Airport and Brawley Municipal Airport.

The noise element of the Imperial County general plan sets a CNEL level of 65 dB as the acceptable limit for residential and professional office uses. A noise impact analysis is required for proposed developments that would be exposed to CNEL values above 60 dB.

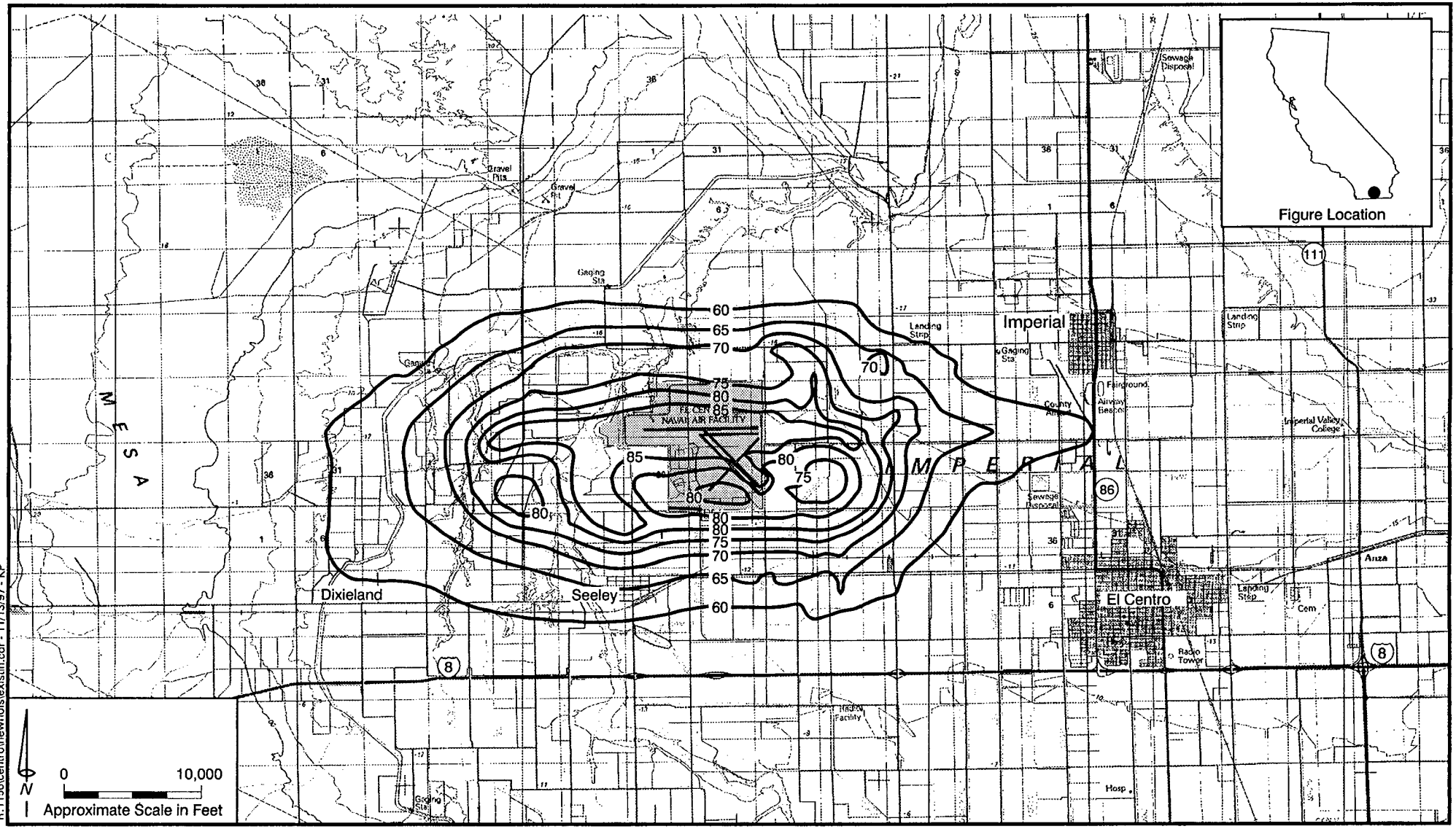
Existing Airfield Noise

Figure 3-27 illustrates 1996 aircraft noise conditions around the airfield at NAF El Centro. The 65-dB CNEL contour extends well beyond the boundaries of NAF El Centro. Noise levels generally are higher than indicated in Figure 3-27 during winter months when the Blue Angels are training at NAF El Centro. Noise levels are lower than indicated in Figure 3-27 during the hottest summer months, when flight activity is reduced.

All on-base land uses at NAF El Centro, including family housing areas and BOQs, are exposed to CNEL conditions above 75 dB (Zone 3). Because relocating these facilities is not practical, the AICUZ study recommends building design and acoustic insulation measures to achieve acceptable interior noise levels.

NAF El Centro is surrounded by agricultural and open space land uses, with scattered rural residences. The closest residential communities are in Seeley (1 mile [1.6 km] to the south), Imperial (6 miles [10 km] to the east), and El Centro (7 miles [11 km] to the southeast). One school in the town of Seeley is exposed to CNEL conditions above 65 dB. Schools in El Centro and Imperial are outside the outside the 65 dB CNEL contour.

Noise complaints from off-base areas come mostly from El Centro. Most noise complaints are triggered by unusual individual flight events rather than by routine



Existing noise contours do not extend into the Town of Imperial or city of El Centro.

LEGEND:

— 75 — Community Noise Equivalent Level (CNEL) in decibels (dB)

NAF El Centro

NAF El Centro
Existing Noise Contours

Facility Development for West Coast Basing of the F/A-18-E/F Aircraft

Source: Wyle 1997

Figure 3-27

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airport noise conditions. Flight patterns at NAF El Centro are modified from standard operations to minimize overflights of populated areas and other recognized noise-sensitive areas.

Use of NAF El Centro results from training programs for aircraft squadrons that are assigned to other military bases. Although aircraft squadrons from other military bases are often stationed at NAF El Centro temporarily while using surrounding training ranges, there are currently no aircraft squadrons permanently based at NAF El Centro. Aircraft from NAS Lemoore periodically are sent to NAF El Centro to use nearby training ranges.

Existing Traffic Noise

Table 3-29 summarizes traffic noise levels along off-base major roadways providing access to NAF El Centro. The highest traffic noise levels occur along Imperial Avenue.

Table 3-29
Existing Traffic Noise Levels Near NAF El Centro

Location	CNEL at 100 feet to Centerline (dBA)	Distance to 65 dB CNEL Contour (feet)
Evan Hewes Highway		
West of Drew	64.4	90
Drew – Bennett	64.4	90
Bennett - Forester	66.3	120
Forrester - Imperial	66.2	120
Drew Road		
North of Evan Hewes	59.7	<50
South of Evan Hewes	62.8	70
Bennett Road		
North of Evan Hewes	62.8	70
South of Evan Hewes	61.8	60
Forrester Road		
North of Evan Hewes	64.3	90
South of Evan Hewes	66.6	130
Imperial Avenue		
North of Evan Hewes	69.5	200
South of Evan Hewes	61.8	60

Source: Giroux & Associates 1996.

Existing Use of the R-2508 Airspace Complex

Aircraft temporarily stationed at NAF El Centro also conduct operations within the R-2508 Complex. Aircraft travelling from NAF El Centro to R-2508 would fly under positive control of the FAA, until entering R-2508 when they are under the control of the High Desert TRACON, at altitudes of 19,000 feet to 23,000 feet

(5,791 to 7,010 m) msl. There are no sensitive resource areas beneath the flight route to R-2508 from NAF El Centro.

Once aircraft enter the R-2508 Airspace Complex, they can begin training activities that result in a wide range of flight altitudes, air speeds, and aircraft power settings. Aircraft are required to maintain flight altitudes of at least 3,000 feet (914 m) AGL when flying over designated noise sensitive areas illustrated in Figure 3-2 (Sequoia and Kings Canyon National Parks, the 1977 boundaries of the former Death Valley National Monument, and the 1977 boundary portion of the Domeland Wilderness). Noise from temporarily deployed F/A-18C/D aircraft travelling between NAF El Centro and R-2508, and from operations with R-2508, would be similar to those discussed above for F/A-18C/D aircraft at NAS Lemoore.

Existing Use of Military Training Routes

Aircraft temporarily stationed at NAF El Centro also conduct operations within a number of low-altitude military training routes. As discussed above under the NAS Lemoore alternative, these routes all avoid noise sensitive resource areas except R-1257. As indicated in Figure 3-3, VR-1257 begins near Lopez Point on the California coast, crosses through Joshua Tree National Park and Anza Borrego Desert State Park, and ends at the training ranges northwest of NAF El Centro.

Current use of the VR-1257 corridor, as described above under the NAS Lemoore alternative, is relatively low. The 164 aircraft sorties flown along the VR-1257 corridor during 1997 includes sorties of F/A-18C/D aircraft based at NAS Lemoore but temporarily deployed at NAF El Centro.

The low annual use of VR-1257 results in annual average CNEL noise levels of 55 dBA for those portions of the route flown at 400 feet (122 m) AGL and annual average CNEL levels of less than 50 dBA for those portions of the corridor flown at altitudes of 1,000 or 1,500 feet (305 or 457 m) AGL (Wyle Laboratories 1998).

3.8 BIOLOGICAL RESOURCES

This section describes the biological resources at NAS Lemoore and NAF El Centro. The discussion of biological resources includes vegetation, wildlife, special status species, and sensitive habitats.

Definition of Resource

For the purpose of this report, biological resources are defined as all plant and animal species that occur within the two alternative facilities. Plant associations or recognizable floristic groupings or plant communities are referred to as habitat types in this report, and vegetation and wildlife associated with these habitat types are described. Special status species are defined as those plant and animal species that are listed as threatened or endangered by the United States Fish and Wildlife Service (USFWS) or California Department of Fish and Game (CDFG) and those species proposed for federal or state listing. Sensitive vegetation types and wildlife habitats include those that receive federal regulatory protection.

Analysis Approach

Biological resource data were collected from existing reports, as described for each base and from field investigations. Nomenclature used throughout this report conforms to Hickman (1993) for plants, Holland (1986) for plant communities, Farrand (1985) for birds, Stebbins (1985) for reptiles and amphibians, and Ingles (1965) for mammals.

Special status species were identified by querying the California Natural Diversity Database (RAREFIND), an electronic database of the CDFG (1997), the Electronic Inventory, an electronic database for the California Native Plant Society (CNPS) (Skinner and Pavlik 1994), and from a list provided by the USFWS (Appendix G) of species that may occur at each base. In addition, field investigations were conducted from July 28 to August 1, 1997, to verify information contained in the reference documents and to identify any significant resources.

Regulatory Considerations

Federal Endangered Species Act. The Federal Endangered Species Act (16 USC §§ 1531, *et seq.*) requires that the USFWS issue a permit for actions that would result in killing, harming, or harassing a federally listed endangered or threatened species. This permit process is directed under Section 7 of the federal Endangered Species Act for actions in which a federal agency is involved and in a similar process under Section 10a of the federal Endangered Species Act for state and local agencies, as well as for individuals. Federal agencies are required to consult with the USFWS (or National Marine Fisheries Service [NMFS] for some species) prior to undertaking actions that may affect endangered species. A federal agency is required to obtain a biological opinion from the USFWS on whether its actions may jeopardize the continued existence of any threatened or endangered species. Federal agencies are prohibited from enacting activities that would jeopardize the continued existence of these species.

California Endangered Species Act. California provides procedures similar to the Federal Endangered Species Act for nonfederal projects under the California Endangered Species Act, California Fish and Game Code (§ 2090 *et seq.*). For example, the CDFG can adopt a federal biological opinion as a state biological opinion under California Fish and Game Code (§ 2095).

Wetlands protection. Executive Order 11990 requires that federal agencies avoid construction in wetlands, unless there is no practical alternative and that all practicable measures are provided to minimize harm to wetlands, including opportunities for public review of plans or proposals. Wetlands are considered sensitive and declining resources by several regulatory agencies, including the CDFG and the USFWS. The US Army Corps of Engineers (COE) considers wetlands to be important to the public interest in that they perform significant biological functions, such as providing nesting, breeding, foraging, and spawning habitat for a wide variety of resident and migratory animal species. Wetlands also provide for the movement of water and sediments, ground water recharge, water purification, and storage of stormwater runoff.

The COE defines wetlands as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. The COE regulates impacts to wetlands and other waters under Section 404 of the Clean Water Act. Projects that involve excavating dredged or fill material into waters of the United States, including wetlands, must be reviewed and authorized by the COE and reviewed by the US EPA.

3.8.1 NAS Lemoore Alternative

Affected Area

The affected area for biological resources at NAS Lemoore includes the operations and administrative housing areas. These are the only areas where there is a potential for impacts. The Natural Resources Management Plan for NAS Lemoore (US Navy 1990c) identified habitat types found on-base that are described below.

Vegetation

Buildings, roads, parking lots, landscaped areas, and disturbed annual grasslands cover most of NAS Lemoore's administrative, housing, and operational areas. Agricultural lands with little or no native vegetation surround the developed areas. Wetlands associated with the irrigation and drainage ditches are found in the agricultural areas and in the Sunset Lakes area in the northeast corner of the property.

Developed and landscaped lands. The vegetation in the developed and landscaped areas of NAS Lemoore consists of ornamental trees, shrubs, and small lawn areas

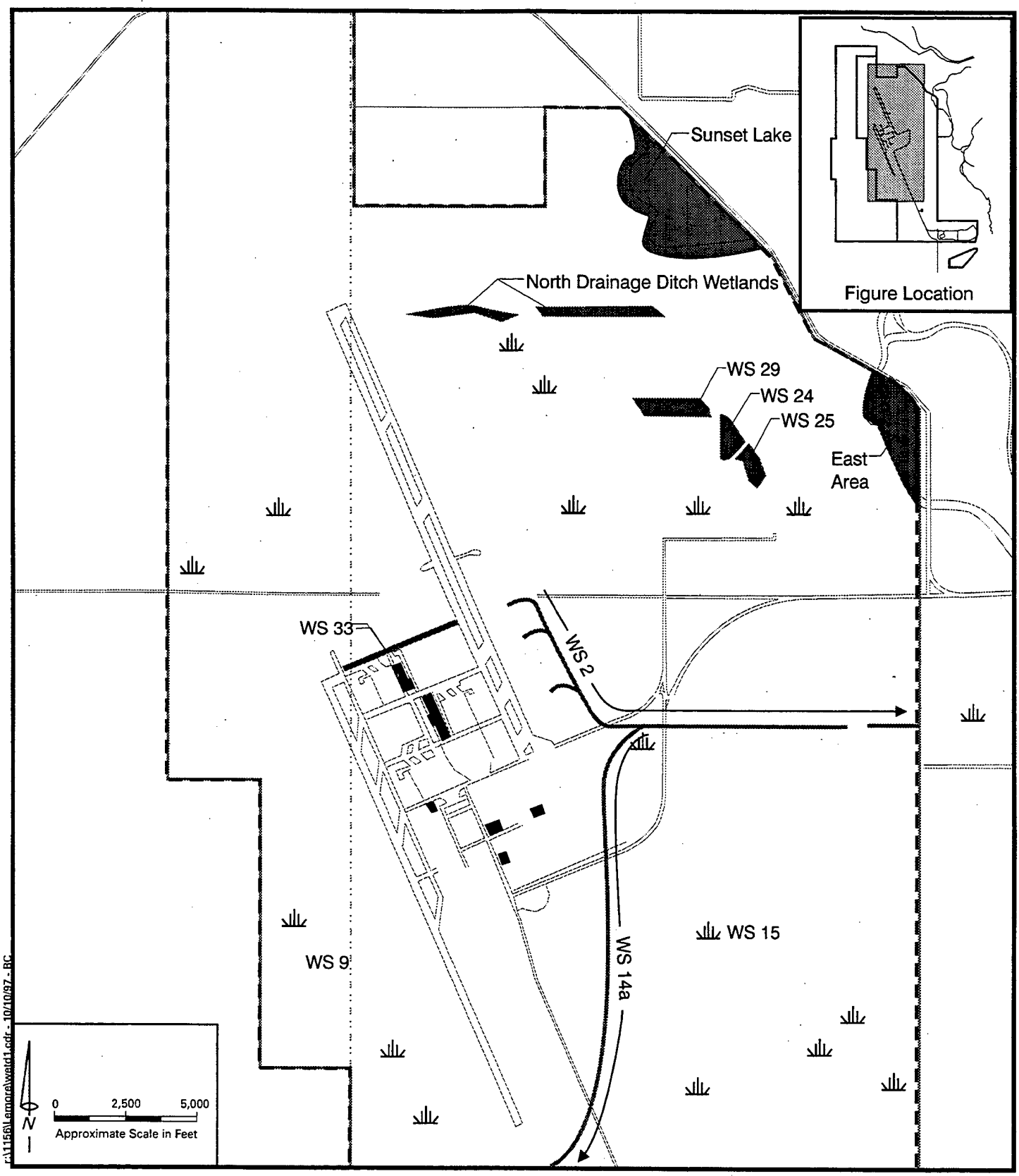
near selected buildings. Representative trees and shrubs found within the operations area include Washingtonian palm (*Washingtonian* sp.), honey locust (*Gleditsia triacanthos inermis*), black locust (*Robinia pseudo-acacia*), oleander (*Nerium oleander*), and pyracantha (*Pyracantha* sp.). The small lawn areas are planted with Bermuda grass (*Cynodon dactylon*).

The administration area includes juniper (*Juniperus* sp.), fir (*Abies* sp.), pine (*Pinus* sp.), incense cedar (*Libocedrus decurrens*), tamarisk (*Tamarix sp.*), acacia (*Acacia* sp.), honey locust, ash (*Fraxinus* sp.), olive (*Olea* sp.), eucalyptus (*Eucalyptus* sp.), Fremont cottonwood (*Populus fremonti*), poplar (*Populus* sp.), willow (*Salix* sp.), sycamore (*Platanus* sp.), Washington palm, palo ornamental fruit trees (*Cercidium* sp.), palo verde (*Cercidium torreyanum*), crepe myrtle (*Lagerstroemia indica*), and pomegranate (*Punica granatum*). There are few native plant species found in these areas.

Disturbed annual grassland. Disturbed annual grasslands surround the developed areas and are found almost entirely associated with the administrative area. These areas are mowed and plowed annually to reduce the threat of fire. The plants found in these areas include canary grass (*Phalaris canariensis*), barley (*Hordeum stebbinsi*), foxtail chess (*Bromus madritensis*), fiddleneck (*Amsinckia* sp.), Russian thistle (*Salsola pestifer*), wild oats (*Avena fatua*), vinegar weed (*Trichostema lanceolatum*), and sweet fennel (*Foeniculum vulgare*).

Agricultural. Cotton is the largest agricultural crop grown on NAS Lemoore. Other crops include barley, wheat, sugar beets, alfalfa, field corn, tomatoes, beans, onions, garlic, safflower, and melons. There is very little natural vegetation in the agricultural areas as the fields are plowed to the edge of roads and irrigation ditches. Plant species common to the disturbed annual grassland described above are sparsely distributed along dirt access roads and ditches, and some species common to the wetland areas can be found in the irrigation ditches or near well heads.

Wetlands. Wetlands at the NAS Lemoore site are described in the Wetland Identification and Classification Report (Tetra Tech 1996) and are indicated on figures 3-28 and 3-29. Nearly all NAS Lemoore wetlands are associated with irrigated agriculture, primarily from Westlands Water District irrigation valves and ditches. All but two wetland areas are in engineered excavations. Five of the inventoried wetlands are of sufficient size and permanence to be of significance to wildlife of the area. While the remaining wetlands have hydrophytes growing within them, the hydrology of the area does not naturally provide a sufficient water source for them to be of significance to wildlife. Standing water occurs in these locations due only to intermittently seeping irrigation pipes or pumped irrigation water.



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Wetland areas are scattered throughout the base on agricultural outlease lands.

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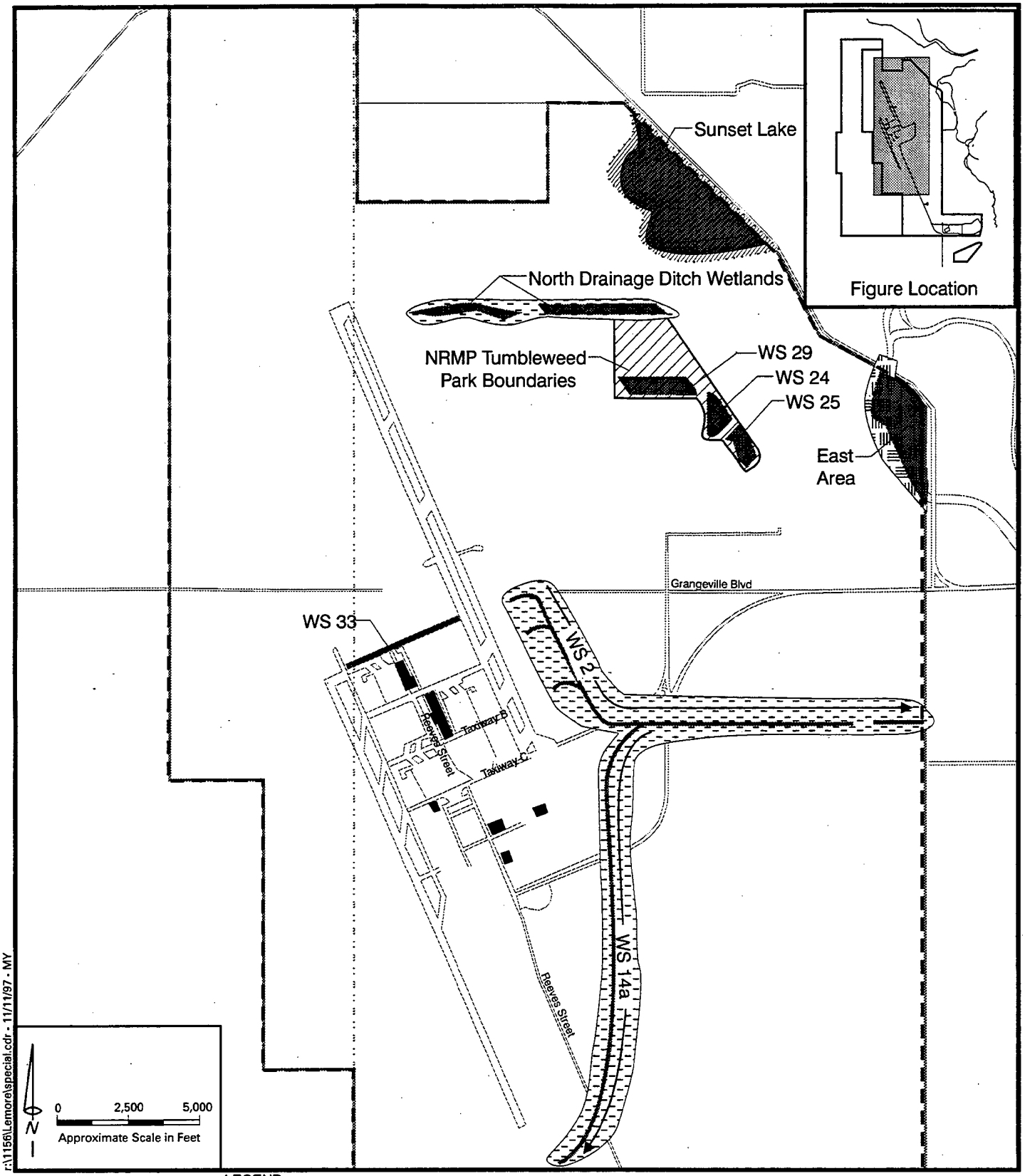
- Wetland areas
- Other wetland areas
- Construction/Expansion Projects
- NAS Lemoore Boundary

NAS Lemoore Wetland Areas: Operations Area

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: US Navy GIS Data; Crane, 1997; Donn, 1997.

Figure 3-28



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Habitat for special status species occurs to the north and east of the proposed construction sites.

LEGEND:

- Other wetland areas
- Giant garter snake potential habitat
- Valley elderberry long horn beetle potential habitat
- Tipton/Fresno kangaroo rat habitat (Tumbleweed Park)
- Potential California least tern and western snowy plover habitat
- Construction/Expansion Projects
- NAS Lemoore Boundary

NAS Lemoore Habitat for Special Status Species: Operations Area

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: US Navy GIS Data; Crane, 1997; Donn, 1997.

Figure 3-29

There are three wetlands near the NAS Lemoore Operations Area, none of which are in or directly adjacent to proposed project locations. No wetlands occur within the Administration/Housing Area of NAS Lemoore. Wetland sites 2, 33, and 9 are completely or partially within the boundary of the Operations Area (Figure 3-28). Wetland site 2 consists of the main drainage ditch, running southeast to east along the northeast and east sides of Runway 32-R. This wetland site alternates between open water and freshwater marsh habitat. It is heavily overgrown, containing such freshwater marsh species as cattails (*Typha* sp.), umbrella sedge (*Cyperus* sp.), curly dock (*Rumex crispus*), and rabbitfoot beard grass (*Polypogon monspeliensis*), along with blueweed (*Helianthus ciliaris*), narrow-leaf milkweed (*Asclepias fascicularis*), bush seepweed (*Suaeda moquinii*), foxtail chess (*Bromus madritensis rubens*), saltgrass (*Distichlis spicata*), and alkali-mallow (*Malvella leprosa*), which line the edges of the banks. The main drainage ditch carries runoff from the Flight Operations Area and agricultural land across NAS Lemoore in an easterly direction to the Kings River. Although no proposed project actions are planned in this area, this wetland site has trapped sediments and heavy metal residuals from numerous years of aircraft washdowns and has been declared an installation restoration (IR) site.

Wetland site 33 consists of the drainage ditch that runs between taxiways 32-R and 32-L at the north end of the Operations Area. This wetland site alternates between open water and freshwater marsh habitat. The dominant vegetation within the ditch includes blueweed, dallis grass (*Paspalum dilatatum*), and heliotrope (*Heliotropium* sp.), with additional plant species including bristly ox-tongue (*Picris echioides*), prickly sow thistle (*Sonchus asper*) and cocklebur (*Xanthium strumarium*). This ditch transports runoff to the main drainage ditch.

Wetland site 9 consists of a small open-water sump pond located on the western side of NAS Lemoore Operations Area. The wetland area contains cattails and water smartweed (*Polypogum amphibium*). Black willows (*Salix gooddingii*), tamarisk, heliotrope, bristly ox-tongue, dallis grass, and blueweed line the edges of the pond. This wetland site is near the southwest corner of the Operations Area, well away and upslope of any proposed project sites.

Wildlife

Wildlife found at NAS Lemoore represent those common to the San Joaquin Valley and are described below by habitat type.

Developed and landscaped lands. Wildlife found in these areas are typical of urban areas and include house mouse (*Mus musculus*), roof rat (*Rattus rattus*), pocket gopher (*Thomomys* sp.), and California ground squirrel (*Spermophilus beecheyi*). Bird species include mourning dove (*Zenaida macroura*), house sparrow (*Passer domesticus*), house finch (*Carpodacus mexicanus*), European starling (*Sturnus vulgaris*), rock dove (*Columba livia*), barn swallow (*Hirundo rustica*) and Brewer's blackbird (*Euphagus cyanocephalus*).

Disturbed annual grassland. Mammals associated with this habitat type at NAS Lemoore include black-tailed jackrabbit (*Lepus californicus*), cottontail (*Sylvilagus audubonii*), coyote (*Canis latrans*), skunk (*Mephitis* sp.), opossum (*Didelphis marsupialis*), and a number of rodents, such as ground squirrel (*Spermophilus* sp.), Fresno kangaroo rat (*Dipodomys nitratoides exilis*), and Tipton kangaroo rat (*D. n. nitratoides*). Reptiles associated with this habitat type include western whiptail (*Cnemidophorus tigris*), western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*), and gopher snake (*Pituophis melanoleucus).* Common bird species include loggerhead shrike (*Lanius ludovicianus*), common raven (*Corvus corax*), western burrowing owl (*Athene cunicularia hypugea*), and American kestrel (*Falco sparverius*).

Agricultural. Some 46 species of water birds and shore birds have been observed on the base, including a variety of herons, egrets, geese, ducks, plovers, sandpipers, and gulls (US Navy 1990c). These birds are most numerous during the winter and spring months and are most commonly associated with the agricultural and wetland areas. Thirteen species of raptors also have been seen on-base. These include nine species of hawk and four species of owl, including western burrowing owl. In addition, the agricultural areas support game birds, such as mourning dove and ring-necked pheasant (*Phasianus colchicus*), and a wide variety of other birds, including red-winged blackbird (*Agelaius phoeniceus*), tricolored blackbird (*Agelaius tricolor*), and yellow-headed blackbird (*Xanthocephalus xanthocephalus*). Reptiles, amphibians, and mammals found here include those associated with the disturbed grassland but at much lower population levels.

Wetlands. Most amphibians and reptiles associated with wetland areas are confined to the irrigation and drainage ditches found on the base and the wetland areas in the northeast corner of the base. Common species include California treefrog (*Hyla californiae*), bullfrog (*Rana catesbeiana*), western aquatic garter snake (*Thamnophis couchi*), and common kingsnake (*Lampropeltis getulus*). Bird species commonly using the wetland areas include great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), American coot (*Fulica Americana*), red-winged blackbird, and marsh wren (*Cistothorus palustris*).

Special Status Species

Table 3-30 describes status and presence at NAS Lemoore for threatened and endangered species and species of special concern that were identified by the USFWS (Appendix G). This table includes species found within Fresno and Kings counties whose range or habitat requirements could include NAS Lemoore. Seven federally listed endangered species, seven federally threatened species, 19 species of federal concern, seven state-listed endangered species, three state-listed threatened species, and four state species of special concern could occur at NAS Lemoore. Figures 3-29 and 3-30 depict known special status species habitat at NAS Lemoore.

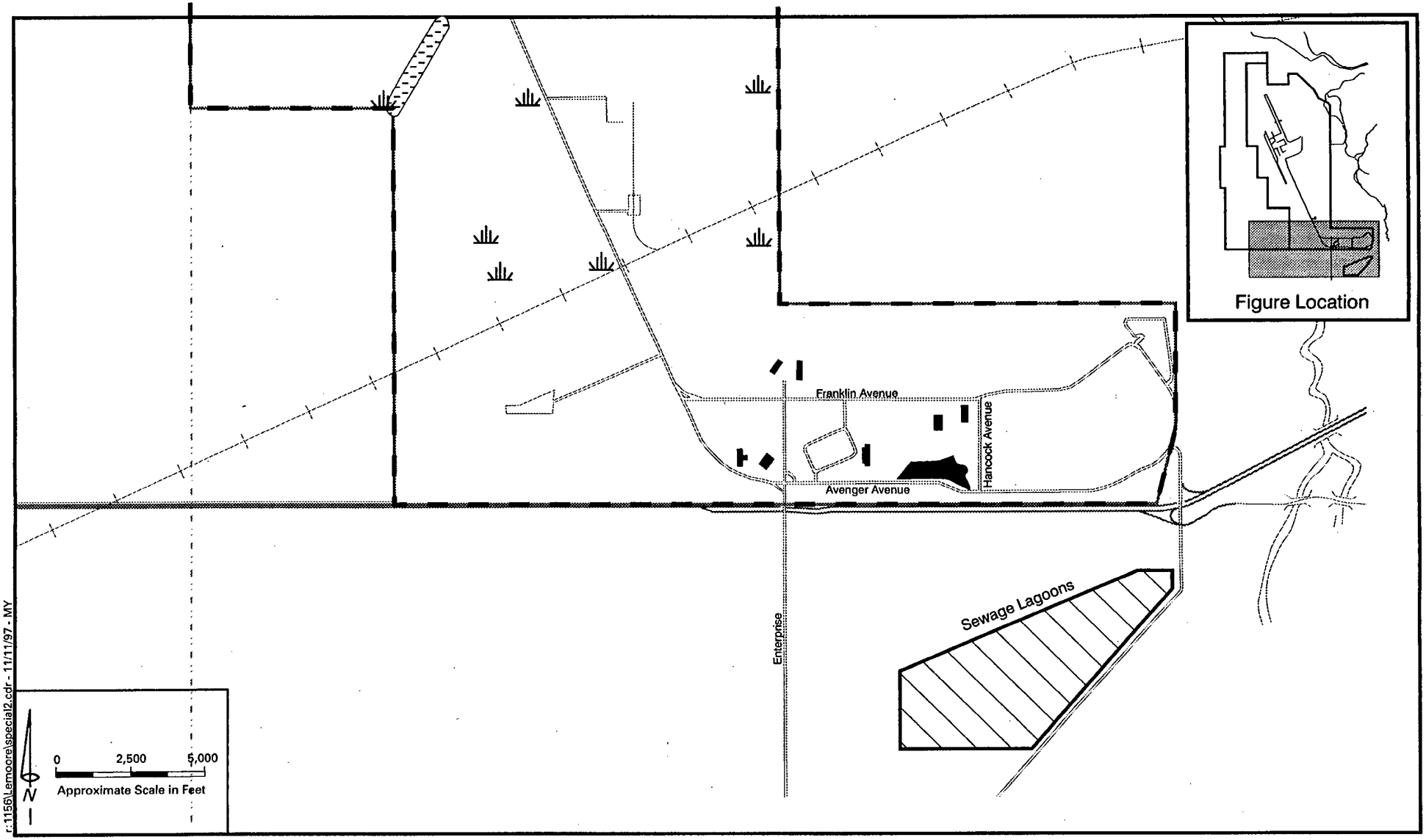
Table 3-30
Special Status Species Inhabiting or Potentially Inhabiting the Vicinity of NAS Lemoore

Scientific Name	Common Name	Federal/State/ CNPS Status	Present on Project Site?
Mammals			
Ammospermophilus nelsoni	Nelson's antelope ground squirrel	SC/-/-	P
Dipodomys ingens	giant kangaroo rat	E/E/-	U
D. nitratoides	Fresno kangaroo rat	E/E/-	C
D. nitratoides brevinasus	short-nosed kangaroo rat	SC/-/-	P
D. nitratoides nitratoides	Tipton kangaroo rat	E/E/-	C
Eumops perotis californicus	greater western mastiff bat	SC/-/-	P
Myotis ciliolabrum	small-footed myotis bat	SC/-/-	U
M. volans	long-legged myotis bat	SC/-/-	P
M. yumanensis	Yuma myotis bat	SC/-/-	P
Onychomys torridus tularensis	Tulare grasshopper mouse	SC/-/-	P
Perognathus inornatus	San Joaquin pocket mouse	SC/-/-	U
Plecotus townsendii townsendii	Pacific western big-eared bat	SC/-/-	P
Vulpes macrotis mutica	San Joaquin kit fox	E/T/-	P
Ovis canadensis californiana	California bighorn sheep	E/T/-	U
O. c. cremnobates	Peninsular bighorn sheep	E/T/-	U
Birds			
Athene cunicularia hypugea	western burrowing owl	SC/CSC/-	C
Branta canadensis leucopareia	Aleutian Canada goose	T/-/-	P
Buteo regalis	ferruginous hawk	SC/-/-	P
Charadrius alexandrinus nivosus	western snowy plover	T/CSC/-	P
C. montanus	mountain plover	C/-/-	P
Empidonax traillii brewsteri	little willow flycatcher	SC/E/-	U
Falco peregrinus anatum	American peregrine falcon	E/E/-	P
Haliaeetus leucocephalus	bald eagle	T/E/-	P
Plegadis chihi	white-faced ibis	SC/-/-	C
Sterna antillarum brownii	California least tern	E/E/-	P
Reptiles			
Clemmys marmorata marmorata	northwestern pond turtle	SC/-/-	P
Clemmys marmorata pallida	southwestern pond turtle	SC/-/-	P
Crotaphytus silus	blunt-nosed leopard lizard	E/-/-	P
Masticophis flagellum ruddocki	San Joaquin whipsnake	SC/-/-	P
Phrynosoma coronatum frontale	California horned lizard	SC/-/-	U
Thamnophis gigas	giant garter snake	T/T/-	P
Amphibians			
Rana aurora draytoni	California red-legged frog	T/CSC/-	U
Scaphiopus hammondi	western spadefoot toad	SC/CSC/-	U
Fish			
Hypomesus transpacificus	delta smelt	T/T/-	Unknown
Invertebrates			
Branchinecta lynchi	vernal pool fairy shrimp	T/-/-	P
Desmocerus californicus dimorphis	valley elderberry longhorn beetle	T/-/-	P
Lytta molesta	molestan blister beetle	SC/-/-	Unknown

Source: USFWS 1997a; CDFG 1997.

Notes:

Federal Status	State/CDFG Status	CNPS Status	Present?
E = Endangered	E = Endangered	1B = Rare and endangered in California and elsewhere	C = Confirmed
T = Threatened	T = Threatened	4 = Limited distribution	P = Possible
PE = Proposed endangered	R = Rare		U = Unlikely
PT = Proposed threatened	CSC = California species of special concern		
SC= Species of concern			



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Habitat for the Least tern and western snowy plover occurs north of the proposed NAMTRA and Counseling and assistance Center.

LEGEND:

- Wetland areas
- Potential giant garter snake habitat
- California least tern and western snowy plover habitat
- Construction/Expansion Projects
- NAS Lemoore Boundary

Source: US Navy GIS Data; Crane, 1997; Donn, 1997.

NAS Lemoore Habitat for Special Status Species: Administration/Housing Area

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Figure 3-30

Aircraft stationed at NAS Lemoore would also use training ranges and MTRs that are not in the immediate vicinity of the air station. These ranges may include habitat of other sensitive species. Peninsular bighorn sheep habitat may be found beneath the VR-1257 MTR and California bighorn sheep habitat is found beneath stereo transit routes from NAS Lemoore to the R-2508 Complex.

3.8.2 NAF El Centro Alternative

Affected Area

The affected area for biological resources includes resources within the boundaries of NAF El Centro. The Integrated Natural Resources Management Plan for NAF El Centro (US Navy 1997f) identifies the habitat found on-base; these habitat types are described below.

Vegetation

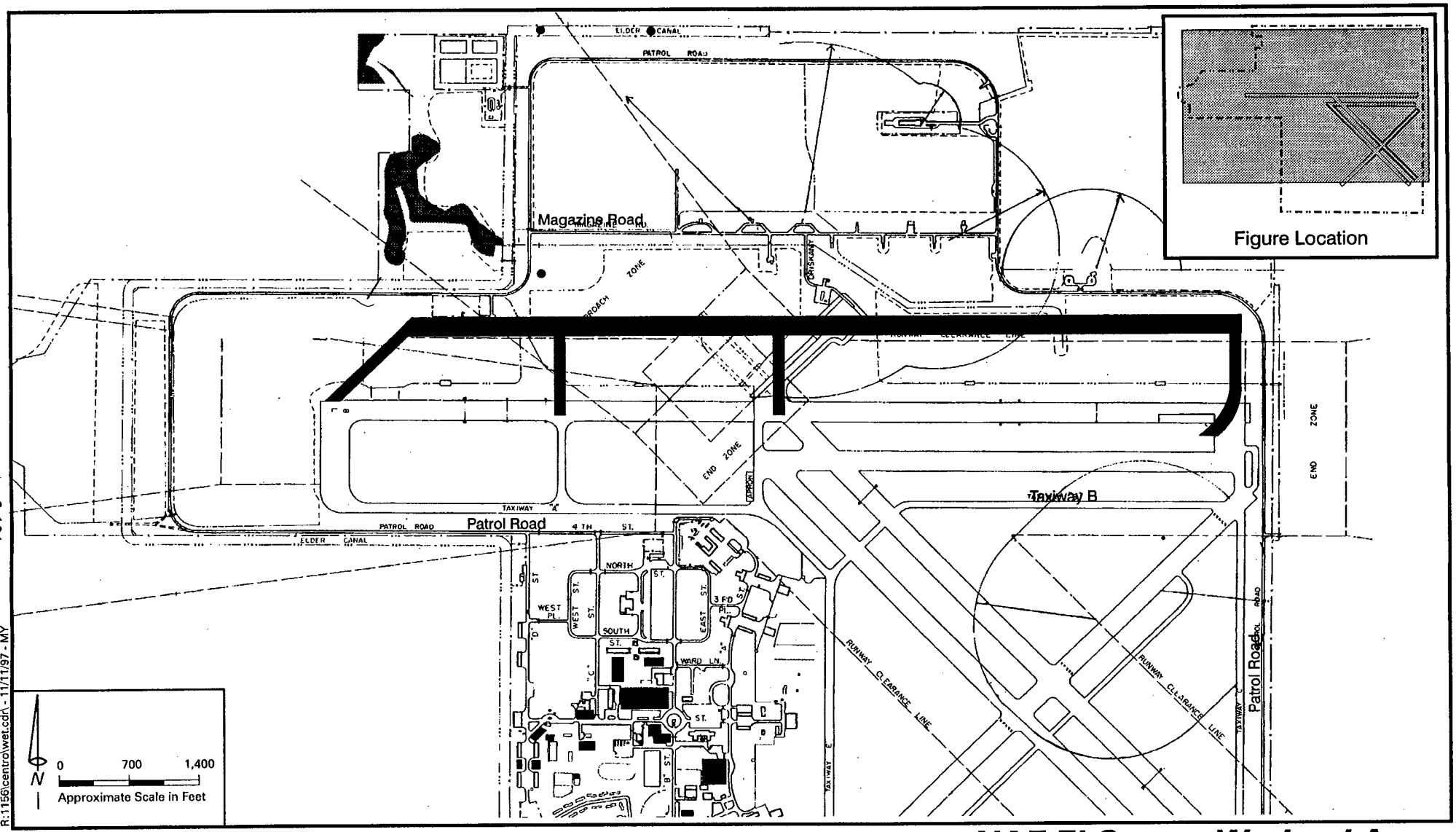
Most of the lands at NAF El Centro have been heavily disturbed. Some areas are developed with structures or are paved and include a minimum of landscaping. Other areas have been graded or plowed to reduce the fire hazard, while still other areas are in agricultural production. The character of remaining disturbed plant communities is strongly influenced by the sparseness and unpredictability of rainfall and high soil alkalinity.

Developed and landscaped areas. This habitat type includes buildings, parking areas, and landscaped areas within NAF El Centro. Common plant species found include eucalyptus, Brazilian pepper tree (*Schinus terebinthifolius*), and oleander. Few native plants are found in these areas.

Disturbed grassland. These areas include dirt roads, bare soil, and other disturbed lands. Wildlife diversity is low due to human disturbance and the absence or scarcity of vegetation. Weedy species, such as telegraph weed (*Heterotheca grandiflora*), black mustard, and Bermuda grass, tend to exist in undeveloped areas, such as between taxiways and runways and in many of the large bare soil areas.

Agricultural. Crops grown on the agricultural lands leased to farmers by NAF El Centro include alfalfa and Bermuda grass for seed. Many of the same species found in the disturbed grassland areas are found on field edges or irrigation ditches.

Wetlands. The Natural Resources Conservation Service completed a jurisdictional wetland delineation of NAF El Centro on November 1996. Figure 3-31 shows the location of jurisdictional wetlands found on NAF El Centro. The only jurisdictional wetland that was identified is in the northeast corner of the base in an old riverbed of New River. There are no other jurisdictional wetlands found on the base. There are several irrigation ditches on the base, which were examined during a field visit on July 31, 1997, but there is no indication of hydric soils or sufficient hydrologic conditions to support a wetland.



3-101

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Wetland areas occur north of proposed construction sites.

LEGEND:

- Wetland areas
- Construction/Expansion Projects

NAF El Centro Wetland Areas

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: US Navy 1997.

Figure 3-31

Wildlife

Developed and landscaped areas. Wildlife associated with the developed portions of NAF El Centro include mice, ground squirrels, bats, and opossums. Birds commonly found in this habitat type include rock dove, mourning dove, common grackle (*Quiscalis quiscula*), Brewer's blackbird, house finch, and house sparrow.

Disturbed grassland. The disturbed grasslands support black-tailed jackrabbit, ground squirrel, kangaroo rat (*Dipodomys* sp.), and skunk. Bird species include killdeer (*Charadrius vociferus*), lesser nighthawk (*Chordeiles acutipennis*), western burrowing owl, and American kestrel. Reptiles found in the disturbed grassland areas at NAF El Centro include side-blotched lizard, desert horned lizard (*Phrynosoma platyrhinos*), and desert spiny lizard (*Sceloporus magister*).

Agricultural lands. The agricultural lands, with monotypic planting, provide temporary habitat for a limited number of wildlife species that tolerate human activities. Coyote, raccoon (*Procyon lotor*), skunk, and a variety of small rodents can be found associated with the agricultural lands. Bird species sighted on agricultural lands on the base include great blue heron, burrowing owl, northern harrier (*Circus cyaneus*), white-faced ibis (*Plegadis chichi*), great egret, snowy egret, and red-winged blackbird. The Salton Sea and Pacific Flyway, located to the north of NAF El Centro, attract over 300 species of birds, including migratory waterfowl that use the agricultural fields as resting areas.

Special Status Species

Special status species in the vicinity of NAF El Centro are listed in Table 3-31. This table includes species found within Imperial County whose range or habitat requirements could include NAF El Centro. Two state-listed and federally listed threatened species, four federally listed endangered species, two federal species of concern, two state-listed endangered species, and three state species of special concern are identified in this table as being in the vicinity of NAF El Centro. Table 3-31 describes status and presence at NAF El Centro for threatened and endangered species that were identified by the USFWS (Appendix G). Habitat for many of these species is not present at NAF El Centro, as indicated in Figure 3-32, which depicts special status species habitat at the base.

In addition, aircraft stationed at NAF El Centro would use training ranges and MTRs not in the immediate vicinity of NAF El Centro. These ranges may include habitat for other sensitive species, for example, the VR-1257 MTR passes over Peninsular bighorn sheep habitat, the R-2508 Complex contains habitat for the California bighorn sheep, and the Barry M. Goldwater range contains Sonoran pronghorn habitat.

Table 3-31
Special Status Species Inhabiting or Potentially Inhabiting the Vicinity of NAF El Centro

Scientific Name	Common Name	Federal/State/ CNPS Status	Present on Project Site?
Mammals			
Ovis canadensis californiana	California bighorn sheep	E/T/-	U
O. c. cremnobates	Peninsular bighorn sheep	E/T/-	U
Antilocapra americana sonoriansis	Sonoran Pronghorn	E/T/-	U
Birds			
Athene cunicularia hypugea	western burrowing owl	SC/CSC/-	C
Empidonax traillii extimus	Southwestern willow flycatcher	E/E/-	U
Falco peregrinus anatum	peregrine falcon	E/E/-	P
Rallus longirostvis yumanensis	Yuma clapper rail	E/T/-	U
Reptiles			
Gopherus agassizi	desert tortoise	T/T/-	P
Phrynosoma m'calli	flat-tailed horned lizard	SC/CSC/-	C
Uma notata notata	Colorado desert fringe-toed lizard	-/CSC/-	C
Fish			
Cyprinodon macularius	desert pupfish	E/ /-	U
Plants			
Astragalus magdalenae var. *peirsonii*	Peirson's milkvetch	PE/ /1B	P
Pilostyles thurberi	Thurber's pilostyles	-/-/4	C
Pholisma sonorae	sand food	-/-/1B	C

Source: USFWS 1997b, US Navy 1997b

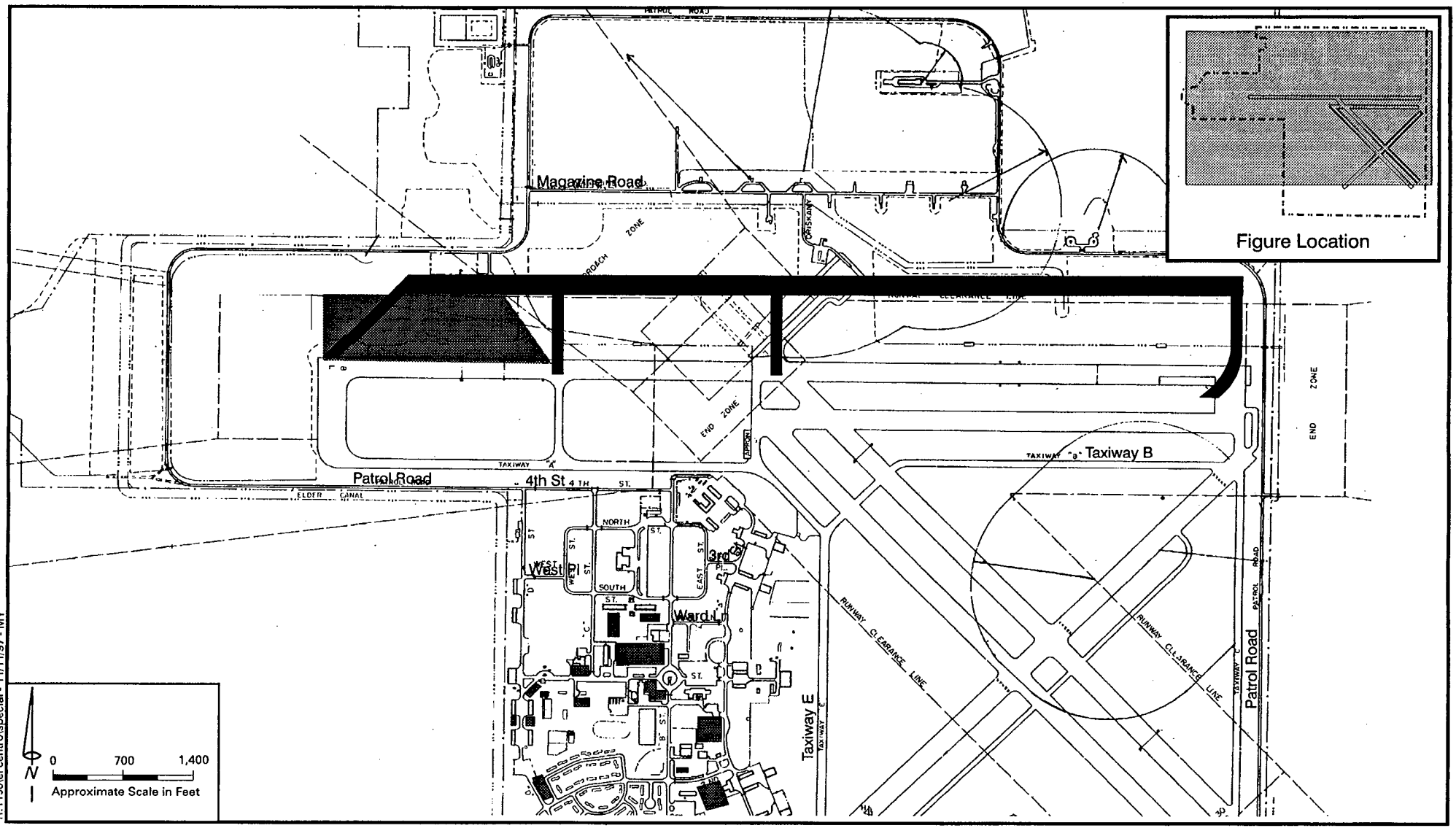
Notes:

Federal Status
E = Endangered
T = Threatened
PE = Proposed endangered
PT = Proposed threatened
SC = Species of Concern

State/CDFG Status
E = Endangered
T = Threatened
R = Rare
CSC = California species of special concern

CNPS Status
1B = Rare and endangered in California and elsewhere
4 = Limited distribution

Present?
C = Confirmed
P = Possible
U = Unlikely



3-104

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Construction of the taxiway would encroach onto burrowing owl habitat.

LEGEND:

- Burrowing owl habitat
- Construction/Expansion Projects

NAF El Centro Habitat for Special Status Species

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: US Navy 1997.

Figure 3-32

3.9 HYDROLOGY AND SURFACE WATER QUALITY

This section describes the surface and ground water hydrology, water quality drainage, and flood hazards associated with water resources at the two alternative bases.

Definition of Resource

Hydrology concerns the quality, circulation, and distribution of water. For the purposes of this analysis, hydrology is evaluated with respect to existing hydrologic conditions, including drainage patterns and flood potential. Water quality involves the chemical and physical composition of water as affected by natural conditions and human activities.

Regulatory Considerations

Water resource regulations focus on the right to water use and the protection of water quality. As a rule, each state regulates the use of water within its boundaries (except for interstate water resources). The California Department of Water Resources (DWR) allocates state water resources.

The principal federal laws protecting water quality are the Clean Water Act (33 USC § 1251, *et seq.*) (CWA) and the Safe Drinking Water Act. Both laws are enforced by the US Environmental Protection Agency (US EPA 1995). The Clean Water Act protects surface water quality and preserves wetlands. The Safe Drinking Water Act protects drinking water supplies.

At the state level, the Porter-Cologne Water Quality Control Act gives the State Water Resources Control Board (SWRCB) and nine regional water quality control boards (RWQCBs) responsibility for protecting surface and ground water quality. As such, the RWQCBs prepare water quality control plans (WQCPs) defining the beneficial uses and standards for protection of the waters within their regions. The regional boards also implement provisions of the CWA delegated to states, such as the National Pollutant Discharge Elimination System (NPDES), which regulates point (industrial) and nonpoint (stormwater) sources of pollutants. The bases assessed in this analysis are required to comply with NPDES permit requirements by obtaining construction and industrial stormwater permits and individual point-source municipal and industrial discharge permits.

The Federal Emergency Management Agency (FEMA), in support of local flood management agencies, identifies flood zones under the National Flood Insurance Program (NFIP). A product of these studies is Flood Insurance Rate Maps (FIRMs), which delineate the regions that would be inundated by floods with average recurrence intervals of 100 and 500 years. FEMA flood insurance programs do not apply to federal lands, such as the two alternative bases.

3.9.1 NAS Lemoore Alternative

Affected Area

The affected area for NAS Lemoore includes the base and drainages immediately downstream of the base.

Surface Water Hydrology and Drainage

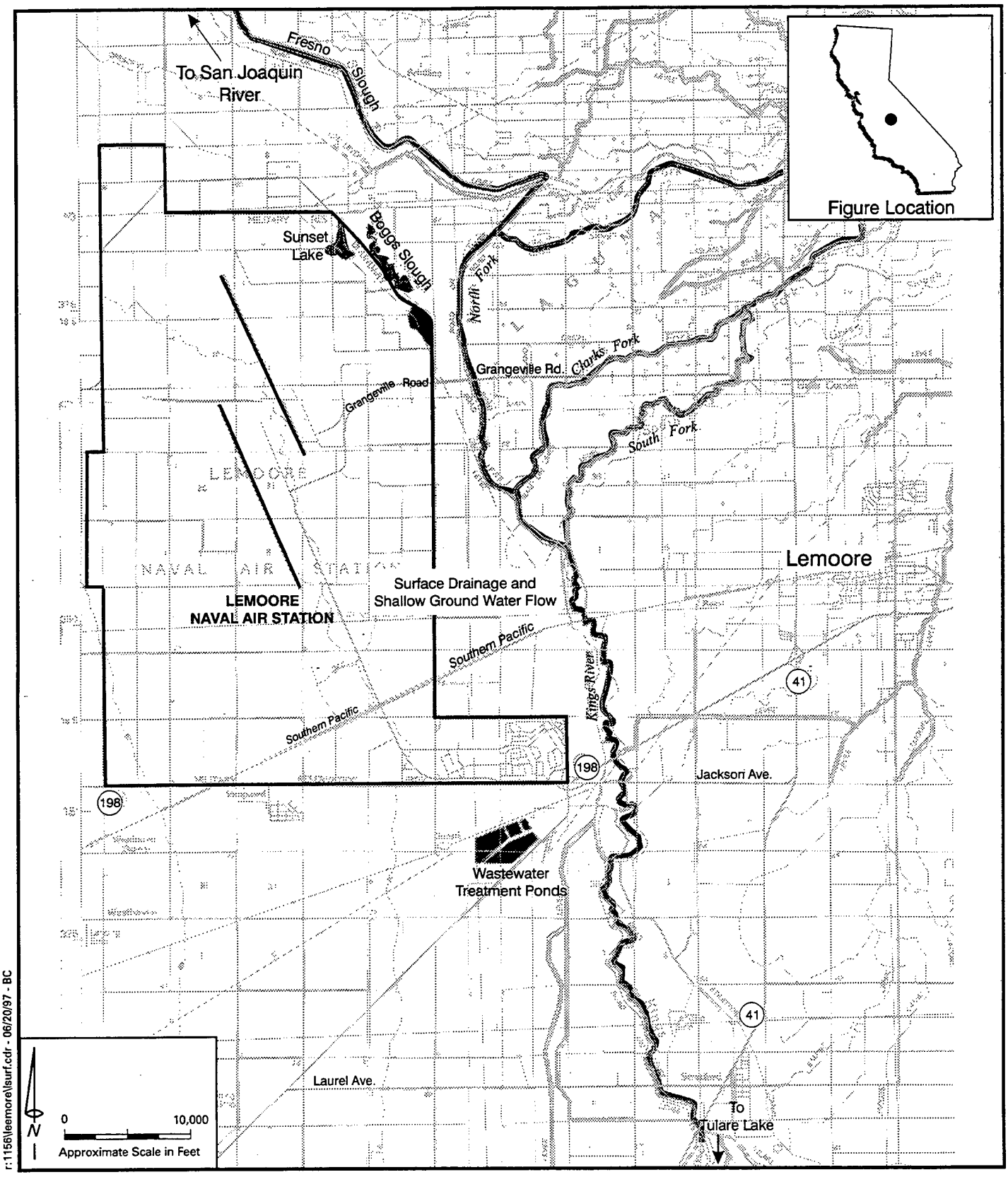
NAS Lemoore is mainly within the Westside Basin, adjacent to the Kings and Tulare lake basins of the Tulare Lake hydrologic region. The base is near the divergence of the north and south forks of the Kings River on its alluvial fan. The north fork flows north into the San Joaquin River drainage; the south fork runs south near the eastern boundary of the base and drains to Tulare Lake, which has no outlets. Present day flows in the Kings River are depleted by upstream irrigation diversions, so that during most of the year, there is little flow in the Kings River as it passes NAS Lemoore. Average precipitation within the Tulare Lake hydrologic region is 15.4 inches (39 cm) per year (DWR 1994). However, in the vicinity of NAS Lemoore, the average annual rainfall is only 6 to 8 inches (15 to 20 cm).

Elevations at the base range from approximately 210 feet to 265 feet (64 to 81 m) above msl (Figure 3-33). The land surface in the vicinity of the base is relatively level and slopes toward the northeast at a rate of approximately 8 feet (2.4 m) per mile (1.6 km). In the past, surface runoff from the alluvial fan of the Arroyo Pasajero, which collects drainage from the hills west of Coalinga, has sometimes flowed across the base into the Kings River. The California Aqueduct created a barrier to this flow.

Surface drainage at NAS Lemoore is generally to the northeast, toward the Kings River. Drainage is poor in some areas, occasionally resulting in ponding. Wetlands in the northeast part of the base that lie along the North Fork of the Kings River are fed in part by stormwater runoff from the base and agricultural drainage. South of Highway 198 there are approximately 400 acres (162 ha) of sewage treatment ponds for treating sanitary wastewater from NAS Lemoore.

Ground Water Hydrology

The Tulare Lake Basin is underlain by a thick sequence of clay sediments deposited in the large lakes that have covered the region in recent geologic time. The clay deposits overlie and confine several freshwater aquifers at relatively great depths. The confined ground water has been highly exploited for agriculture, resulting in overdraft conditions, where net ground water withdrawal exceeds recharge. Ground water overdrafts resulted in 4 to 12 feet (1 to 4 m) of land subsidence by the 1960s in the immediate vicinity of NAS Lemoore. Subsidence of more than 20 feet (6 m) occurred further to the west (Poland and Evenson 1966).



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Kings River is the principal surface water feature near NAS Lemoore.

LEGEND:

Water

NAS Lemoore Boundary

NAS Lemoore
Principal Surface Water Features

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: USGS Fresno 1:100,000-scale topographic map 1982.

Figure 3-33

Imported surface water from the state and federal water projects has significantly reduced dependence on ground water, except during droughts. Ground water use during an average water year in the Tulare Lake Basin is estimated to be about 915,000 acre-feet (112,865 ha-m). During drought conditions, annual ground water use increases nearly four-fold to 3,773,000 acre-feet (465,400 ha-m) (DWR 1994).

The thick, extensive, shallow clay sediments underlying the region limit local recharge of the deeper aquifers. Instead, water used for crop irrigation (primarily cotton) contributes to the shallow perched water table. The shallow water table ranges from approximately 5 to 10 feet (1.5 to 3 m) deep in agricultural outlease areas and flows generally toward the northeast (CSU Fresno 1990). Drainage sumps and canals are needed to prevent flood irrigation recharge from saturated shallow soils and to keep the water table below the root zone of crops. NAS Lemoore currently does not use any ground water, but there are wells on-base for agricultural use on outlease land.

Flooding

Flooding potential exists at NAS Lemoore due to the potential overflow of streams to the west. The natural floodplain for these streams lies north of the town of Huron and crosses Highway 198 immediately west of NAS Lemoore. Floodwaters drain to the Kings River by crossing NAS Lemoore. None of the proposed construction sites associated with this alternative are within areas historically subject to flooding or ponding.

Water Quality

In portions of Kings County, elevated concentrations of boron, arsenic, and selenium occur in ground water, affecting drinking water supplies. Boron concentrations also impair crop yields. Shallow ground water is of generally poor quality due to the accumulation of salts in irrigation water. The total dissolved solids concentration of shallow ground water in the vicinity of NAS Lemoore is reported to be in the range of 500 to 1,500 milligrams per liter (mg/l). By comparison, the primary drinking water standard for total dissolved solids is 1,000 mg/l.

Ground water and local surface water are not a primary source of potable water for NAS Lemoore or the surrounding communities. Good quality ground water is available from wells that are 1,500 to 2,000 feet (457 to 610 m) deep (CSU Fresno 1990), which are used only as an emergency water supply. Domestic and agricultural water is supplied by the Westlands Water District through the California Aqueduct.

3.9.2 NAF El Centro Alternative

Affected Area

The affected area for NAF El Centro includes the base and immediate downstream areas of the New River, as well as canals crossing or draining the base.

Surface Water Hydrology and Drainage

NAF El Centro is within the Imperial Valley basin of the Colorado River hydrologic region. With an average annual precipitation of 5.5 inches (14 cm), the Colorado River Basin is characterized as arid (DWR 1994). The Imperial Valley covers 1,870 square miles (4,843 sq. km) and drainage is provided by the New River, the Alamo River, and irrigation drainage ditches that discharge to the Salton Sea, which has no outlets. The Salton Sea watershed, which extends into Mexico, has an area of about 7,700 square miles (19,943 sq. km), with an average annual precipitation of 1 to 3 inches (2.5 to 7.5 cm) (Iwanaga Seidel Associates 1987).

Most of the water used within the Colorado River Basin comes from the Colorado River, and most is used for agriculture. Irrigation water from the Colorado River is delivered to water users by a network of canals operated by the Imperial Irrigation District (IID). Total agricultural water demand in the Colorado River Basin is about 3,705,000 acre-feet (457,011 ha-m) per year, while urban water demand is about 301,000 acre-feet (37,128 ha-m) (DWR 1994). Colorado River water is allocated by interstate and international agreements. The amount of ground water used annually within the Colorado River Basin is independent of rainfall and averages about 80,000 acre-feet (9,868 ha-m) per year. NAF El Centro receives 2 acre-feet (0.25 ha-m) per day of raw water from the IID/Colorado River and treats this water on-base.

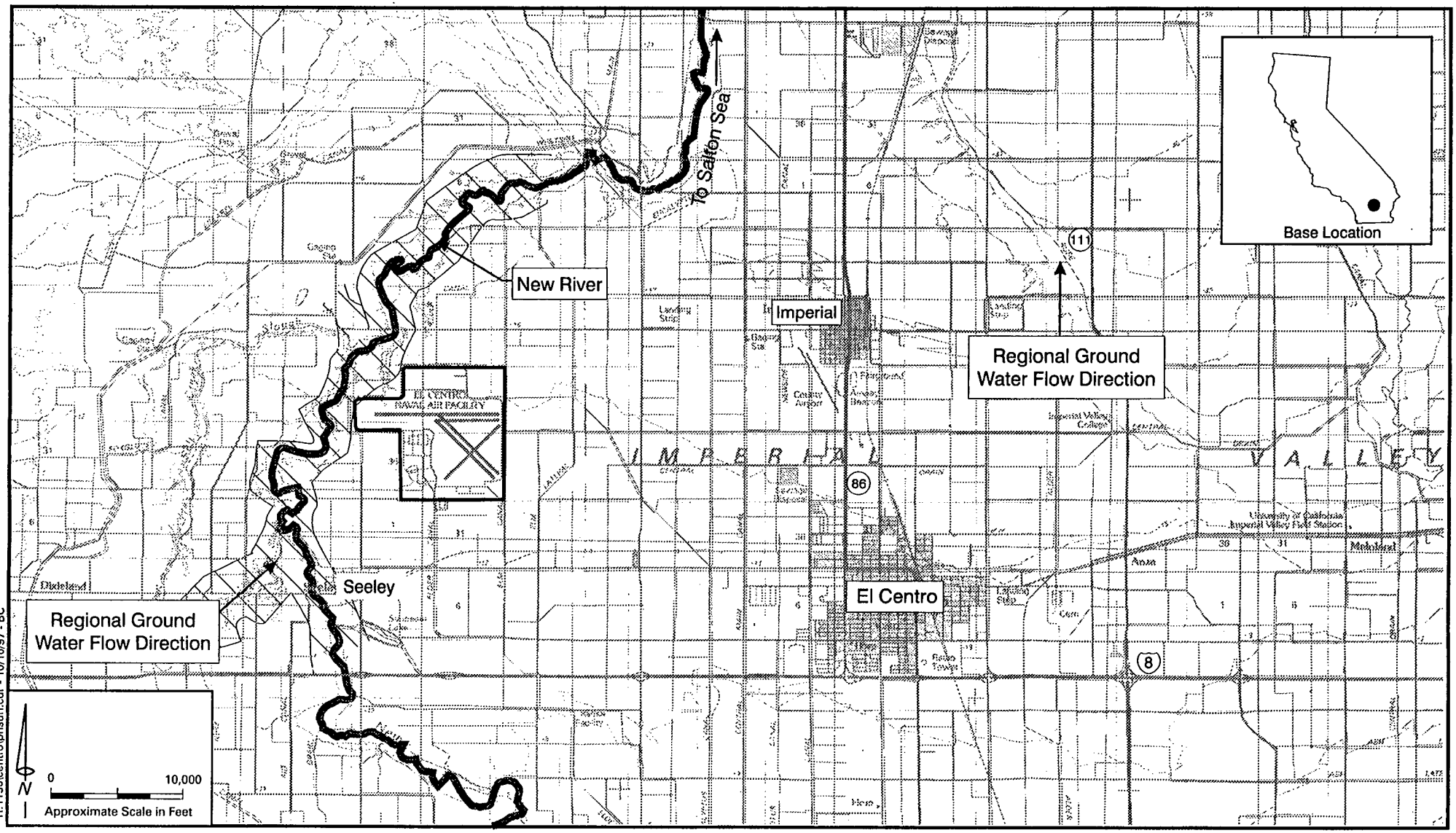
The topography at NAF El Centro is generally flat. Elevations range from 52 feet (16 m) below msl to 42 feet (13 m) below msl. Surface drainage is to the New River, which originates in Baja California, Mexico, and runs near the western boundary of NAF El Centro (Figure 3-34).

Ground Water Hydrology

Shallow, perched ground water occurs at depths of as little as 3 to 5 feet (1 to 1.5 m) below the ground surface in the vicinity of NAF El Centro (US Department of Agriculture 1981). Several confined aquifer units exist below the perched aquifer. Wells drilled to depths of 1,000 to 8,000 feet (305 to 2,438 m) encounter hydrothermal brines, which are used to produce geothermal energy (Hely et al. 1966). The main source of ground water recharge in the Imperial Valley is from the Colorado River and leakage from canals (Loeltz et al. 1975). Regional ground water flow moves toward the axis of the Imperial Valley, which roughly corresponds with the channel of the Alamo River, and then flows northwest toward the Salton Sea (Bechtel 1996, Morton 1997, Loeltz et al. 1975).

Flooding

The floodplain of the New River extends approximately 1,200 feet (366 m) onto the westernmost portion of the base. No flooding has occurred outside this floodplain since the completion of Hoover Dam and the All American Canal, which prevented the Colorado River from flooding the region (US Navy 1988a).



3-110

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The New River is the principal surface water feature near NAF El Centro.

LEGEND:

- Water
- Approximate New River Flood Plain
- NAF El Centro

NAF El Centro
Principal Surface Water Features

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: USGS El Centro 1:100,000-scale topographic map 1989.

Figure 3-34

Moderate to severe flash flooding during storms reportedly is restricted to areas within and along stream channels or dry washes having a width of 200 feet (61 m) or more (Iwanaga Seidel Associates 1987).

Water Quality

The New River is used primarily for drainage of agricultural return flows and treated municipal wastewater, which are not suitable for domestic or agricultural use. The Salton Sea contains poor quality water. Ground water in the Imperial Valley contains mineral concentrations in excess of primary drinking water standards. Sulfate concentrations range from 80 to 4,000 mg/l, chloride concentrations from 500 mg/l to 8,500 mg/l, and total dissolved solids concentrations from 1,480 mg/l to 15,700 mg/l (Bechtel 1996, Iwanaga Seidel Associates 1987). The base receives all of its water from the IID, which diverts the water from the Colorado River at the Imperial Dam. The quality and quantity of the water available from the Colorado River has steadily declined during recent years due to increased upstream use and reduced allocations.

3.10 UTILITIES AND SERVICES

This section describes the utility systems and services at each alternative base and surrounding local communities. Water supply systems, wastewater treatment and disposal, solid waste collection and disposal, stormwater collection, natural gas and electric services, health services, child care services, police services, and fire services are discussed.

Definition of Resource

The service providers, applicable supplies or capacities, constraints to service provision, and other relevant information pertaining to public services and utilities are described below for the two alternative bases. Relevant state and federal laws and regulations also are discussed. Information relating to these services was collected from master plans of each naval base and communications with the respective facility planners and service agencies.

Regulatory Considerations

The various utilities and services are subject to different federal, state, and local regulations. These may be municipal codes, permitting requirements, legislation, or federal, state, or local agency requirements. The regulations particular to the various utilities and services at the specific alternative bases are discussed below.

Water supply. Drinking water standards developed under the Safe Drinking Water Act have been used to define cleanup standards for surface water and ground water resources used as a source of drinking water. The EPA enforces this law. The act requires sampling for lead and copper in drinking water. The Navy's Environmental and Natural Resource Program Manual identifies requirements and responsibilities for protecting drinking water supplies at Navy installations.

Wastewater and stormwater collection and treatment system. The RWQCB implements CWA provisions delegated to states, such as the NPDES permits, which regulates point (industrial) and nonpoint (stormwater) sources of pollutants. NPDES permit requirements apply to the discharge of wastewater into sanitary sewers. The stormwater systems operate under NPDES statewide general industrial stormwater discharge permits. In California, the Navy is complying with the SWRCB general permit requirements instead of applying for individual permits for each facility. Navy facilities in California submit a notice of intent to the SWRCB to comply with the general permit requirements.

Solid waste collection and disposal. The Solid Waste Disposal Act of 1965, as amended by the Resource Conservation and Recovery Act (RCRA, 42 USC § 6901, *et seq.*) in 1976, requires that federal facilities comply with all federal, state, interstate, and local requirements regarding the disposal and management of solid waste. RCRA establishes public safety and health standards for disposing of solid waste, including requirements for landfill liners and leachate collection and treatment. RCRA and the Military Construction Codification Act of 1982 also

provide for various means of recovering value from solid waste through reclaiming it for fuel supplements or selling it for profit.

The California Integrated Waste Management Act (Cal. Pub. Res. Code §§ 40000, *et seq.*) requires California cities to divert 25 percent of their solid waste from landfills by 1995 and 50 percent by 2000. California Public Resources Code (Cal. Pub. Res. Code §§ 42000-42023) establishes state programs designed to increase recycling and to encourage the development of commercial markets for recyclable materials. In general, the state places the burden of action and responsibility on the city to meet the state requirements; however, US Navy bases are working to achieve these goals by reducing generation of solid waste and increasing reclamation of recyclable materials. Solid waste management plans at NAS Lemoore and NAF El Centro would continue to be implemented with the introduction of the F/A-18E/F Aircraft.

3.10.1 NAS Lemoore Alternative

Utilities at NAS Lemoore are provided through agreements with local providers and by on-base infrastructure and programs. Most services are provided on-base and are supplemented by local agencies from Kings County and the cities of Lemoore and Hanford. Local utility providers that serve the base include the Westlands Water District (Westlands), the Kings County Waste Management Authority and city of Avenal landfills, the Southern California Gas Company (SCGC), the US Navy Western Area Power Administration (WAPA), and Pacific Gas and Electric Company (PG&E). The base maintains its own wastewater and stormwater collection and treatment system and its own solid waste recycling program and a composting facility. Services are provided by the Naval Hospital Lemoore and the NAS Lemoore Security and Fire departments. These services are supplemented by hospitals throughout Kings County, the county sheriff and fire departments, and the police and fire departments of the cities of Lemoore and Hanford.

Affected Area

The affected area is the entire installation and the surrounding local service areas that would provide off-site utilities and services, such as wastewater treatment and landfill disposal, and supplementary services, such as health services and fire and police protection.

Water Supply Systems

NAS Lemoore purchases water from Westlands, which in turn receives water from the US Bureau of Reclamation's Central Valley Project (CVP). All water at NAS Lemoore is treated on-base before use. Water is piped from the San Luis Canal to the station treatment plant, which can treat 7.5 mgd (28.4 mld). Storage facilities consist of six 600,000-gallon (2,271,000-liter) tanks. NAS Lemoore also has six wells that were the station's source of water before it was connected to the San Luis Canal in 1974. Although water from these wells is generally of poor quality because of high chemical content, one well is used to irrigate windbreak trees in a remote area (US Navy 1994d). The water supply system at the base is in

good condition and does not need any major repairs or upgrades (Stewart 1997). NAS Lemoore's current annual contract with Westlands guarantees the base 977 million gallons of water per year (mgy) (3,698 million liters per year [mly]). The average consumption by the base over the last seven years has been 945 mgy (3,577 mly) (O'Donnell 1997).

The cities of Lemoore and Hanford are served by their own water departments and are operating below their capacities (Pereira 1997, Haley 1997). The City of Lemoore Public Works Department water system consists of five production wells, two standby wells, and two million-gallon (3.8 million-liter) storage tanks. The City of Hanford Public Works Department water system consists of 18 wells and 4 975,000-gallon (3.7 million-liter) storage tanks.

Wastewater Treatment and Disposal

NAS Lemoore treats a combination of sanitary wastewater, industrial wastewater, and stormwater at an on-base sewage pump station. The pump station has an average flow capacity of 2 mgd (8 mld) but can accommodate a peak flow of 4 mgd (15 mld). The average flow to the pump station is 1.7 mgd (6.4 mld), and peak flows are 2.8 mgd (10.6 mld) (O'Donnell 1997). A network of facultative, waste stabilization, and evaporation ponds connected by force mains on approximately 340 acres (138 hectares) provides physical screening and shredding, primary treatment via biological processes, and final processing. The wastewater treatment system at the base is in good condition and does not need any major repairs or upgrades (Stewart 1997). Effluent is monitored daily for volume and quality in compliance with RWQCB requirements (US Navy 1994d).

The cities of Lemoore and Hanford have their own wastewater treatment facilities. All of these facilities are currently operating well below their capacities (Pereira 1997, Sisneroz 1997).

Stormwater Collection

The stormwater collection system at NAS Lemoore consists of a network of underground drains in the operations and administration areas and a series of ditches in the undeveloped areas. These drains and ditches transport stormwater runoff to a wet well and stormwater pumping station where it is mixed with wastewater when the discharge rate of the wastewater system is low. Wet weather runoff is discharged into the Kings River from an open channel if the flow cannot be accommodated by the pump station. In the undeveloped areas, stormwater normally dissipates by evaporation and percolation. The stormwater collection system at the base is in good condition and does not need any major repairs or upgrades (Stewart 1997). NAS Lemoore maintains an NPDES permit regulating its stormwater discharges from industrial activities.

Solid Waste Collection and Disposal

Approximately 4,500 tons (4,050 tonnes) of solid waste were generated at NAS Lemoore in 1993 (US Navy 1994d). Solid waste produced by the base and in local

areas is removed weekly by a private contractor and is delivered to different locations, depending on the waste type. Most solid waste is transported to the Kings County Waste Management Authority (KCWMA) landfill in Hanford. This landfill is projected to close in October 1998, however, KCWMA has negotiated an agreement with Chemical Waste Management to transport solid waste to Chemical Waste Management's Kettleman City landfill for the next 25 years (Adams 1998).

Solid waste from industrial activities at NAS Lemoore is disposed of at the city of Avenal landfill, which is 22 miles (35 kilometers) from NAS Lemoore. The Avenal landfill has a 50-ton per day (45-tonne per day) capacity and is projected to close in 2012 (US Navy 1994d).

Green waste from the base, such as grass clippings, is hauled by the waste contractor to the NAS Lemoore composting facility. The base also manages the Earth Care Recycling Center, which picks up curbside recyclables from the housing area once per week (US Navy 1994d).

Natural Gas and Electric Services

Natural gas is provided to NAS Lemoore and local residents by SCGC. The base also rents natural gas storage facilities from SCGC (US Navy 1994d). In 1996, NAS Lemoore consumed an average of approximately 730,000 cfd (20,400 cmd) of natural gas for cooking and heating on-base facilities (Stewart 1997). The natural gas supply system at the base is in good condition and does not need any major repairs or upgrades (Stewart 1997).

WAPA and PG&E furnish the base with electricity transmitted over PG&E power lines. WAPA allocates a maximum of 18 MW of power per month (Stewart 1997). PG&E provides electricity to the surrounding communities and supplements NAS Lemoore's power needs in the summer when air conditioner use is high. NAS Lemoore consumed approximately 79.8 million KWH of electricity in 1996 (Stewart 1997). The electrical system at the base is in good condition and does not need any major repairs or upgrades (Stewart 1997).

Health Services

The full-service hospital at NAS Lemoore provides services to all military families and their children, and also provides access to emergency care and after-hours services. Naval Hospital Lemoore provides primary care and physical exams for personnel and specialty services, such as laboratory, pharmacy, radiology, and audiology (Crosby 1997). Naval Hospital Lemoore has a staff of 15 primary care providers, a flight surgeon, a nurse practitioner, two physician's assistants, an Independent Duty Corpsman, and four specialty care providers (Ormsbee 1997).

The hospital serves approximately 10,000 patients per month, of which about 6,500 are military family members (O'Donnell 1997). The complex will be expanded, with construction scheduled for completion by mid-1999 (Ormsbee

1997). The hospital also coordinates health services with local area hospitals, of which there are three within a 60-mile (97-kilometer) radius of the base. These are Central Valley General Hospital in Hanford, Hanford Community Medical Center in Hanford, and Kaweah Delta District Hospital in Visalia. All of these hospitals provide a full range of services, including emergency care.

Child Care Services

NAS Lemoore provides full-time and part-time child care services for approximately 300 children of military families. The child development center is capable of handling up to 216 children on a full-time basis. Child care also is provided by Family Child Care, a program that certifies on-base residents to provide child care for up to six children each. Additionally, the base sponsors a School-age Care Program that currently serves 125 children on a part-time basis.

Police Services

Police services within the boundaries of the base are the responsibility of NAS Lemoore Security. Security for the site consists of drive-by patrols and responses to service calls. Two to four patrols are on duty at all times. The department is staffed by 88 military personnel and 12 civilian employees and maintains a 60-member auxiliary security force. Civilians arrested at NAS Lemoore are transferred to the Kings County jail (Billick 1997).

The NAS Lemoore Security Department maintains a memorandum of understanding (MOU) with the Kings County Sheriff's Department. Through the MOU, the Sheriff's Department, staffed by 73 sworn officers, supplies resources not available at NAS Lemoore, such as a special weapons and tactics (SWAT) team and mobile command center. Assistance also is provided in cases of natural disaster or any incident that exceeds NAS Lemoore's capabilities. The cities of Lemoore and Hanford also have their own police departments, staffed by 24 and 44 sworn officers, respectively (Billick 1997).

Fire Services

The NAS Lemoore Fire Department has a staffing level of 52 firefighters, with 22 firefighters on duty daily. The department maintains six fire engines—three for structural fires and three for crash-fire response at the airport. Two structural-fire engines and two crash-fire engines are on duty at all times. The department also maintains a single truck for fighting brushfires (US Navy 1994d). The NAS Lemoore Fire Department has mutual aid agreements with the Kings County Fire Department in Hanford, the City of Lemoore Fire Department, and the City of Hanford Fire Department (US Navy 1994d).

The Kings County Fire Department operates 11 fire stations in the county, with the Lemoore and Island stations located closest to NAS Lemoore. The department has 42 firefighters, 22 structural-fire engines, 13 wildland squads, and a water truck. The City of Lemoore Fire Department has a volunteer fire fighting staff of 35 and maintains six fire engines, a rescue truck, and a medical truck. The City of

Hanford Fire Department operates 2 stations, has 23 firefighters, and maintains four fire engines, a wildland squad, and a light-utility vehicle (US Navy 1994d).

3.10.2 NAF El Centro Alternative

Utilities at NAF El Centro are provided through agreements with local providers and by on-base infrastructure and programs. Most services are provided on-base and are supplemented by local agencies from Imperial County and the cities of El Centro, Brawley, and Holtville. Local utilities providers include the IID, the Imperial County Sanitation (ICS) Landfill, and SCGC. The base maintains its own wastewater and stormwater collection and treatment systems and its own solid waste recycling programs. Services are provided by the branch medical and dental clinic on-base and by the NAF El Centro Security and Fire Departments. These services are supplemented by the Naval Hospital Balboa, hospitals throughout Imperial County, the Imperial County sheriff's and fire departments, and the police and fire departments of the cities of El Centro, Holtville, and Brawley.

Affected Area

The affected area is the entire installation and the surrounding local service areas that would provide off-site utilities and services, such as wastewater treatment and landfill disposal, and supplementary services, such as health service and fire and police protection.

Water Supply Systems

NAF El Centro and local communities, including El Centro, Brawley, and Holtville, purchase water from IID. The base treats the water before distribution for domestic and aircraft-related uses. Agricultural fields are irrigated with raw water from supply canals. IID is the principal supplier of water to the Imperial Valley and distributes approximately 2.6 million acre-feet (0.3 hectare-meters) of Colorado River water to over 500,000 acres (202,350 hectares) of farmland and to nine incorporated communities (US Navy 1990a). NAF El Centro obtains approximately 650,000 gallons per day (gpd) (250,000 liters per day [lpd]) of raw water from IID's Elder Canal and transports it to the water treatment plant in the southwestern area of the base (Sewester 1997). The treatment plant currently treats an average of approximately 440,000 gpd (1.66 mld) and has a capacity of 2.5 mgd (9.5 mld) (Sewester 1997). The existing infrastructure is in good condition (Weller 1997).

Wastewater Treatment and Disposal

NAF El Centro operates its own wastewater treatment plant in the northwestern area of the base. A modified activated sludge system uses bacteria and natural processes to provide primary, secondary, and tertiary wastewater treatment. The treatment plant has a capacity of 300,000 gpd (1.14 mld) of wastewater and presently treats approximately 130,000 gpd (490,000 lpd) (Bay 1997). The plant also has an eight million-gallon (30 million-liter) storage pond that can store wastewater for up to 30 days in cases of emergency. Effluent generated by the

treatment process is monitored by the RWQCB. Treated effluent from the plant is piped and released directly into the New River, which lies immediately northwest of the base. A NPDES permit allows a peak-week average flow of 200,000 gpd (760,000 lpd)from the plant into the New River. The wastewater infrastructure is in good condition and does not require any major repairs (Bay 1997).

The cities of El Centro, Brawley, and Holtville have their own wastewater treatment facilities, all of which are operating well below their capacities (Hines 1997, Smith 1997, Garcia 1997).

Stormwater Collection

On-base storm drains at NAF El Centro collect stormwater into several drainage ditches that traverse the base and the surrounding agricultural land. The system eventually discharges into the Salton Sea from eight outfalls surrounding the base. The stormwater system at the base is in good condition and does not require any major repairs or upgrades (Flowers 1997). Stormwater quality is monitored by the base and conforms to the standards of its NPDES permit.

Solid Waste Collection and Disposal

Solid waste collection and disposal at the base and for local communities is performed by ICS, a private contractor. The waste is disposed of at a private landfill managed by ICS in Imperial, California. Approximately 1,090 tons (989 tonnes) of solid waste were generated at NAF El Centro in 1995, with average monthly waste generation amounting to 90 tons (82 tonnes). The expected closure date of the landfill is 2016 (Curiel 1997).

Under the pollution prevention and management program, NAF El Centro collects and sorts recyclable material from the solid waste stream. Materials gathered include metals, cardboard, glass, plastic, paper, and wood. NAF El Centro also coordinates the direct sales of these recycled items to local processing organizations (Curiel 1997).

Natural Gas and Electric Services

SCGC provides natural gas to NAF El Centro and Imperial County. Natural gas is piped through 8- and 10-inch- (20- and 25-centimeter) diameter gas lines that follow the San Diego and Arizona Eastern Railroads and the Evans Hewes Highway. Natural gas then enters the base through a 3-inch (8-centimeter) diameter main line (US Navy 1990a). NAF El Centro's recent usage averaged 5,034 cfd (468 cmd). The infrastructure is in good condition (Kear 1997).

Electrical power for NAF El Centro and local residents is provided by the IID, which produces 23 percent of its power by burning oil and natural gas and 20 percent by hydroelectric power. The remaining amount is purchased from Arizona Public Service and El Paso Electric (US Navy 1990a). Recent usage at the

facility averaged 50,000 KWH per day, and the electrical system is in good condition (Kear 1997).

Health Services

NAF El Centro has a combined medical and dental clinic on-base. This clinic provides only primary care services to active duty base personnel and their family members and to retired military personnel in the community. The clinic does not provide hospitalization services. Approximately 85 active duty personnel are served per month. Two physicians and one physician's assistant are assigned to the clinic, and two personnel provide administrative support (Rodriguez 1997). Patients requiring medical services beyond what the clinic can provide are referred to civilian medical doctors or to local hospitals. For emergency room or hospital service during business hours, the clinic transports patients to the Balboa Naval Hospital in San Diego. For after-hours medical care, patients use the two major hospitals in Imperial County—El Centro Regional Medical Center in El Centro or Pioneers Memorial Hospital in Brawley (US Navy 1990a). All hospitals in Imperial County provide 24-hour emergency service.

Child Care Services

NAF El Centro provides child care services for 57 children of military personnel. The child development center is operating above its maximum capacity of 40 children. Additionally, child care is provided by family home care, a program that certifies on-base residences to provide child care for up to six children each. Family home care at NAF El Centro provides an additional 17 children with child care services. NAF El Centro is planning to convert a former furniture store and barber shop into classrooms for children, which will provide child care services for an additional 20 children in 1999 (Sewester 1997).

Police Services

Police services at NAF El Centro are provided by approximately 24 military personnel and are coordinated through an on-base police station (Stammreich 1997). The department will be supplemented by additional personnel to monitor the base entrance gate later this year and by four additional personnel in September of 1998 (Stammreich 1997). Military security patrol the base 24 hours a day and the surrounding desert in the evening. NAF El Centro is negotiating an MOU with the City of El Centro for joint police services (US Navy 1990a).

Police services for El Centro are provided by the City of El Centro Police Department. The department operates one police station and employs 44 sworn officers and 22 nonsworn personnel (US Navy 1990a). Additionally, the cities of Holtville and Brawley maintain their own police departments, and the remainder of Imperial County is served by the South Coast Operations Division of the Imperial County Sheriff's Department (Jordan 1997, Graham 1997, Hackett 1997). The Sheriff's Department operates 4 stations and employs 236 personnel, 91 of whom are deputy sheriffs (US Navy 1990a).

Fire Services

NAF El Centro maintains a fire and rescue station in an aircraft hangar on-base. The station has a total staffing level of 37 civilian firefighters, with a minimum of 34 firefighters on duty daily (Zurn 1997). Additionally, the department has five administrative personnel and is equipped with two structural-fire engines, one crash-fire engine, and three fire engines in reserve. The department is not a first respondent for medical emergencies, but eight of its firefighters are trained EMTs. The base maintains mutual aid agreements with the City of El Centro Fire Department and the City and County of Imperial Fire Department for additional fire protection services (Zurn 1997).

The City of El Centro Fire Department operates two stations and employs 37 firefighters. The department maintains three fire engines for active service and two other fire engines as reserves. The Imperial City and County Fire Department provides secondary fire response to the city of El Centro. This department is staffed by 24 volunteer firefighters, operates two stations, and maintains fire engines at 14 fire stations throughout the county (US Navy 1990a). The cities of Brawley and Holtville also have their own fire departments (Zendejas 1997, Gronstedt 1997).

3.11 PUBLIC HEALTH AND SAFETY

This section describes airspace safety, explosives safety quantity distance arcs, and potential electromagnetic radiation hazards at the two alternative installations. Accident potential zones were discussed in Section 3.1, Land Use and Airspace.

Definition of Resource

Airspace Safety

Each base operates an airfield to fulfill its mission. Aircraft operations may be conducted within airspace above and surrounding the base or in special use airspace (i.e., restricted areas, MOAs, and warning areas). Airspace operations and coordination with surrounding air facilities are conducted according to FAA and Navy regulations. Although alterations in aircraft activity at Navy bases do not constitute an environmental impact, the results of aircraft operations and related facilities can have direct and indirect impacts on public health and safety.

Explosive Safety Quantity Distance Arcs

Operations at bases may require storing and handling ordnance. Explosive safety quantity distance (ESQD) arcs are developed to protect humans from the possible sabotage or accidental detonation of explosives or ammunition. ESQD arcs surround each magazine and facility used for storing or handling ordnance, and the distance that the ESQD arc extends from the magazine or facility depends on the type and quantity of explosives authorized for storage or handling. ESQD arcs prohibit placing inhabited buildings within unsafe distances of ordnance storage facilities.

Electromagnetic Radiation

Radar and other high-energy electromagnetic emissions can constitute a hazard to personnel exposed to radiation above a maximum power density. These effects are managed under the regulations of the Navy hazards of electromagnetic radiation to personnel (HERP) program. Ordnance and fuel are also susceptible to the hazards of electromagnetic radiation (EMR). These effects are managed under Navy regulations for hazards of electromagnetic radiation to ordnance (HERO) and Fuel (HERF). Arcs providing a safe distance for storing these substances in relation to communication and radar equipment have been established at each base, as necessary.

An electromagnetic radiation hazard occurs when civilian or military transmitting equipment generate an electromagnetic field sufficient to result in the following:

- Induce or couple currents or voltages with sufficient magnitudes to trip electro-explosive devices in ordnance;
- Cause harmful or injurious effects to humans and to wildlife; or
- Create sparks having sufficient magnitude to ignite flammable materials.

A minimum distance must be maintained between ordnance and communication equipment for the safety of all personnel. An ordnance item is defined as HERO-unsafe when its internal wiring is exposed during testing, which results in additional electrical connections, or when electro-explosive devices with exposed wire leads are present, handled, loaded for assembly or disassembly, or when it is disassembled. A HERO-susceptible ordnance system is any tested ordnance system proven to contain electro-explosive devices that can be adversely affected by radio frequency energy so that the safety or reliability of the system is jeopardized when the system is employed.

HERP is defined in terms of power density or watts of power flowing through a given unit of area. For a HERP condition to exist, personnel would have to be within close proximity to an emitting antenna directing the power into a concentrated area. Therefore, HERP zones are not considered as construction exclusion zones for habitable facilities but as zones where a heightened awareness of the potential hazard should exist. The distances for HERP zones are designated on a case-by-case basis during the initial siting process and involve the Frequency Management Division at each base, which instructs personnel on the hazards of electromagnetic radiation. HERF zones also are handled on a case-by-case basis. No distance guidelines are defined for HERF arc zones.

3.11.1 NAS Lemoore Alternative

Affected Area

The affected area includes airspace above and surrounding NAS Lemoore, special use airspace, ESQD arcs, and electromagnetic radiation arcs.

Airspace Safety

The region or airspace surrounding NAS Lemoore supports high-altitude regional commercial carriers, low-altitude local commercial carriers, small private jets, crop dusters, and military jet fighter aircraft. The main air corridor, west of NAS Lemoore, carries commercial and military aircraft in a northwest-southwest direction along the western edge of the San Joaquin Valley (US Navy 1993b). Commercial air carrier flight corridors traverse the Central Valley at 27,000 feet (8,230 m) above msl. These flight corridors connect northern and southern California (between Los Angeles, Sacramento, and Fresno) and are some of the busiest in the country. The flight corridors are located approximately 20 miles (32 km) on either side of the base.

Private and commercial air traffic is frequent in the region near NAS Lemoore. Commercial and private aircraft routinely descend through the NAS Lemoore terminal radar approach control air traffic facility to land at one of the several private or commercial airports. Neighboring radar air traffic control facilities include Bakersfield to the south, Fresno to the east, and Castle Air Force Base (now closed) to the north. Twelve private airports and three commercial airports

(Harris Ranch, Hanford Municipal, and Corcoran Farms) surround the NAS Lemoore airspace.

Low-altitude propeller aircraft, such as crop dusters and light civilian aircraft, generally use the private airports. Air traffic from these local private and commercial airports may receive air traffic control service from NAS Lemoore on request.

Explosive Safety Quantity Distance Arcs

There are five ESQD arcs at NAS Lemoore. One ESQD arc, with a diameter of 1,250 feet (381 m) from the storage facility, encompasses the proposed project location for the FRS hangar. Figure 3-35 shows the ESQD arcs on-base.

Electromagnetic Radiation

The NAS Lemoore Master Plan has identified 12 HERO-susceptible areas generated by on-base equipment (US Navy 1992b). No ordnance classified as HERO-unsafe is allowed within the specified distances. A transmitter in the air traffic control tower (Transmitter AN/URT 23) affects many facilities in the NAS Lemoore operations area (Figure 3-36). According to the master plan, an alternate site for this transmitter has been investigated, and in 1992 there were plans to relocate it (US Navy 1992b). The status of the relocation is unknown. None of the proposed project sites would be located within an EMR arc.

3.11.2 NAF El Centro Alternative

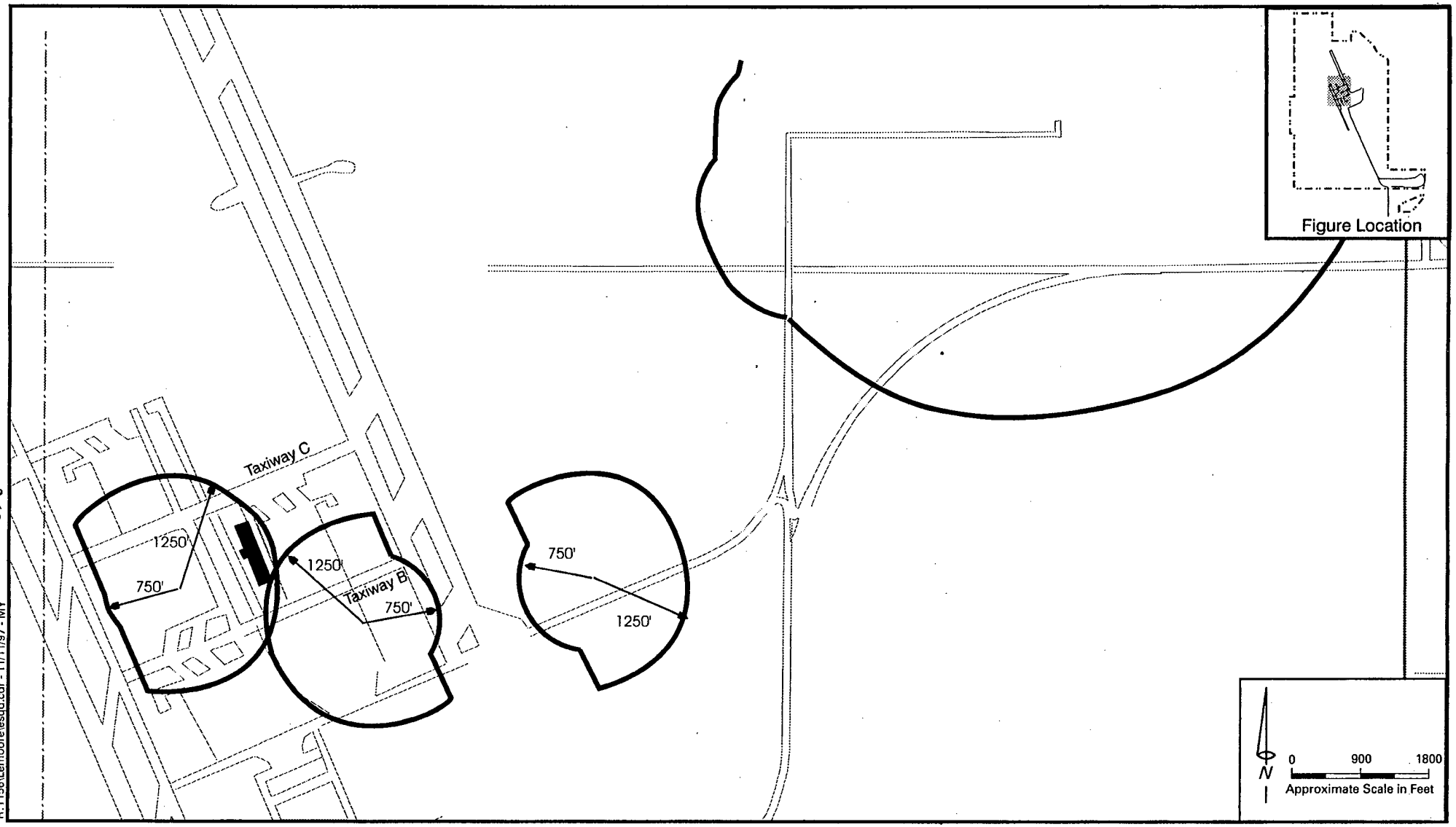
Affected Area

The affected area includes airspace above and surrounding NAF El Centro, special use airspace, areas within ESQD arcs, and electromagnetic radiation arcs.

Airspace Safety

The control zone for airspace granted by the FAA for NAF El Centro is combined with that of the Imperial County Airport. Airspace allocated to Imperial County Airport abuts NAF El Centro airspace to the east. Imperial County Airport handles limited commercial passenger service (to and from San Diego and Los Angeles), mail, light cargo, and general aviation aircraft. Tower coordination between the NAF El Centro airfield and Imperial County Airport permits operational flexibility without hazard at either airfield (US Navy 1988a). NAF El Centro aircraft typically operate at 2,500 feet (742 m) above msl, while the pattern altitude for Imperial County Airport is 1,500 feet (457 m) above msl (Cameron 1997).

The airspace controlled by NAF El Centro extends approximately 2.5 miles (4 km) eastward before encountering Imperial County Airport airspace. This truncated airspace necessitates some additional procedures in support of aircraft operations. First, military aircraft approaching runway 26 from the north must



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The only proposed construction within an ESQD arc at NAS Lemoore would be the fleet hangar.

LEGEND:

ESQD Arcs

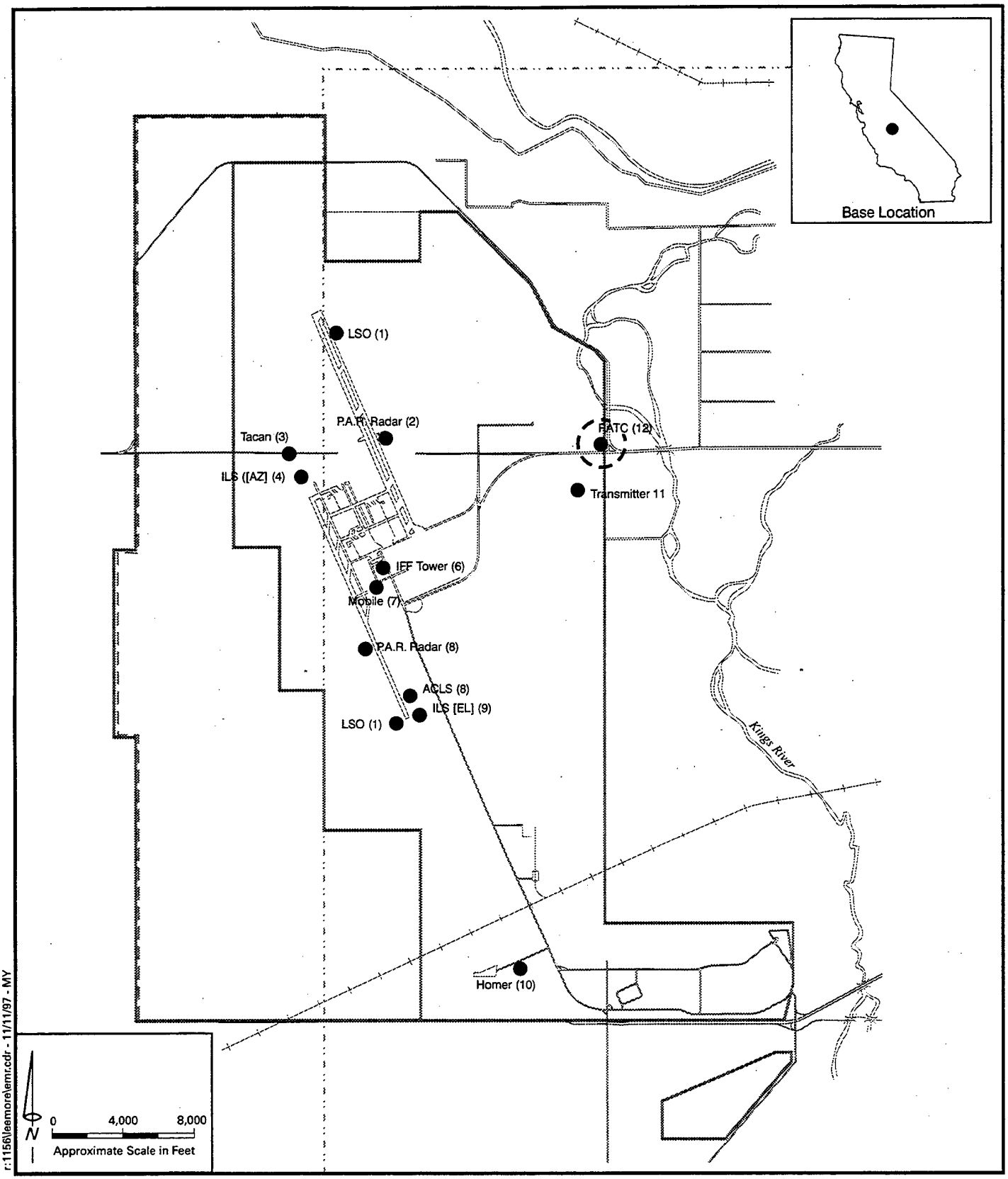
Construction/Expanison Projects

NAS Lemoore ESQD Arcs

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: US Navy 1992.

Figure 3-35



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None of the proposed construction at NAS Lemoore would be within EMR arcs.

LEGEND:

- Electromagnetic Radiation (EMR) Generator Site
- EMR Arcs
- Boundary NAS Lemoore

NAS Lemoore EMR Arcs

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: US Navy 1992.

Figure 3-36

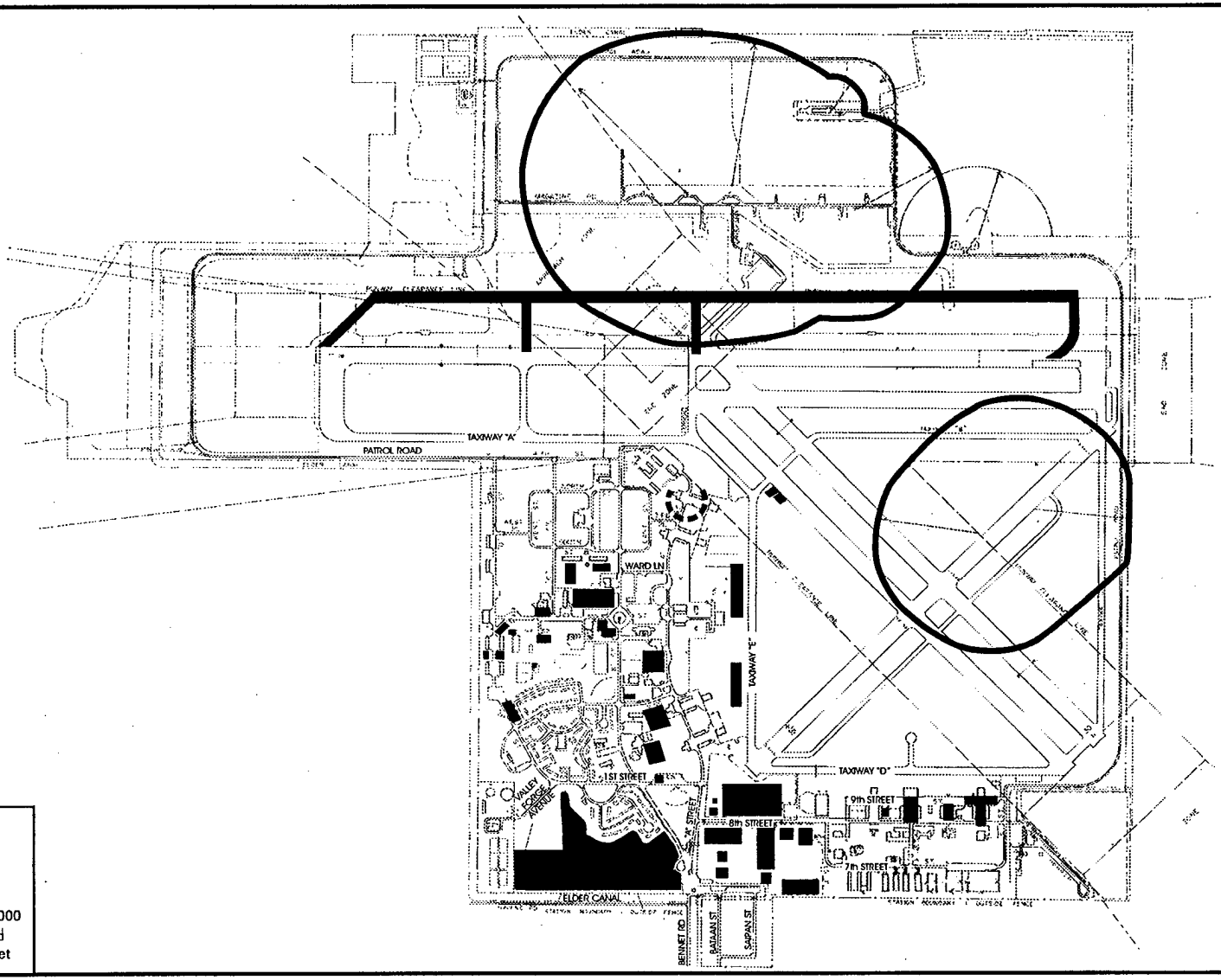
hold to a 3,000-foot (914-m) altitude over Imperial County Airport airspace, descending rapidly thereafter to 1,500 feet (457 m) over NAF El Centro airspace. Second, the airspace boundary also prevents elongation of the downwind leg on Runway 08 patterns.

Explosive Safety Quantity Distance Arcs

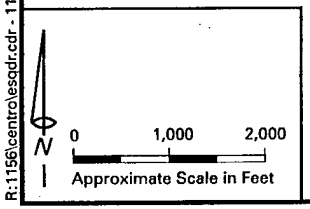
The ESQD arcs at NAF El Centro are used to cover the maximum amount of ordnance authorized for storage or handling at each magazine or facility (US Navy 1988a). There are two groups of ESQD arcs at NAF El Centro surrounding ordnance areas and ordnance loading pads adjoining the airfields. One ESQD arc intersects the proposed project location for the parallel runway and taxiways (Figure 3-37).

Electromagnetic Radiation

The NAF El Centro Master Plan has identified one electromagnetic radiation concern, which may affect ordnance, fuel, or personnel (US Navy 1988a). The air traffic control tower, (Building 130) generates a 500-foot (152-m) electromagnetic radiation arc (Figure 3-35). None of the proposed project sites would be located within an EMR arc.







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3-127

The only proposed construction at NAF El Centro within an ESQD arc is a portion of the runway and taxiway.

LEGEND:

- ESQD Arcs
- EMR Arcs
- Construction/Expansion Projects

NAF El Centro ESQD and EMR Arcs

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: US Navy 1988a.

Figure 3-37

3.12 HAZARDOUS MATERIALS AND WASTES

This section describes hazardous materials and waste at NAS Lemoore and NAF El Centro. Hazardous materials management, hazardous waste management, installation restoration program sites, asbestos, polychlorinated biphenyls, storage tanks and oil/water separators, pesticides, lead, ordnance, and radon are discussed for each alternative.

Current F/A-18 model aircraft (F/A-18A-D) generate approximately 13,800 pounds (6,280 kg) of hazardous waste a year at NAS Lemoore (Smith 1997). The waste streams include waste rags, paint, solvent, absorbent materials, petroleum, oil, lubricant, batteries, adhesive materials, corrosion prevention compounds in aerosol cans, and debris materials. Materials that are unique to the F/A-18E/F aircraft have been evaluated by McDonnell Douglas Aerospace in a report labeled "The F/A-18E/F ILS Environmental Analysis Report MDC 95A0130," dated October 20, 1995.

Definition of Resource

Hazardous Materials

As defined by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, (42 USC § 9601 Parts 14 and 33 [1994]), and the Superfund Amendments and Reauthorization Act (SARA) of 1986, a hazardous material is a substance, pollutant, or contaminant that, due to its quantity, concentration, or physical and chemical characteristics, poses a potential hazard to human health and safety or to the environment if released into the workplace or the environment. The Navy's Environmental and Natural Resources Program Manual (Chief of Naval Operations Instruction [OPNAVINST] 5090.1B [1994]) (US Navy 1994g) states that hazardous materials include but are not limited to hazardous substances, hazardous waste, and any material that a handler or administering agent has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

Hazardous Wastes

The Resource Conservation and Recovery Act (RCRA) of 1976 (40 CFR §§ 240-280 [1997]) and the Hazardous and Solid Waste Amendments (HSWA) of 1984 (40 CFR § 260 [1997]) define a hazardous waste as a solid waste, or combination of wastes, that due to its quantity, concentration, or physical, chemical, or infectious characteristics, may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness, or may pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, disposed of, or otherwise managed. A solid waste is a hazardous waste if it is not excluded from regulation as a hazardous waste (40 CFR § 261.4[b] [1997]), if it exhibits any ignitable, corrosive, reactive, or toxic characteristic, or if it is listed in Subpart D of RCRA.

RCRA requires the management of hazardous wastes through a recordkeeping system that requires manifesting properly labeled hazardous waste shipments from point of generation to ultimate disposal. Also required by federal and California law are proper labeling, storage, containerization, training, and emergency procedures for hazardous waste.

Each base presently conducts industrial operations in support of its mission to maintain and operate aviation activities and other operational forces of the Navy. These operations generate waste materials, which include hazardous wastes. Hazardous wastes generated at each base must be containerized, labeled, stored, and transported off the base in accordance with US EPA, state, and Navy requirements for hazardous waste storage and disposal (US Navy 1994g).

Installation Restoration Program

OPNAVINST 5090.1B provides Navy policy for restoring contaminated sites (US Navy 1994g). The purpose of the Installation Restoration Program (IRP) is to identify, investigate, and clean up or control releases of hazardous substances from past waste disposal operations and hazardous material spills at Navy facilities.

The IRP provides for compliance with the procedural and substantive requirements of CERCLA, as amended by SARA, as well as regulations issued under these acts or by state law. Although the IRP is primarily intended to clean up past releases of hazardous waste, it may address the cleanup of past releases of any pollutant or contaminant that endangers public health, welfare, or the environment, including petroleum, oil, and lubricant products. Cleanup of past contamination from underground storage tanks (USTs) and corrective action for past contamination at RCRA sites may be part of the IRP (US Navy 1994g).

CERCLA requires that all federal facilities comply with state and federal laws with regard to the remediation process. The IRP follows this process and includes the following phases:

- Site discovery (SD) and notification;
- Preliminary assessment (PA);
- Site inspection (SI);
- Hazard ranking system (HRS);
- Remedial investigation/feasibility study (RI/FS);
- Record of decision (ROD);
- Remedial design/remedial action (RD/RA);
- Long-term monitoring; and
- Site closure.

Asbestos

The US EPA, the Occupational Safety and Health Administration (OSHA), and the state of California regulate asbestos-containing material (ACM) remediation. Asbestos fiber emissions into the ambient air are regulated in accordance with Section 112 of the Clean Air Act, which established the National Emissions Standards for Hazardous Air Pollutants (NESHAP). NESHAP regulations address the demolition or renovation of buildings with ACM. The Toxic Substances Control Act (TSCA) (15 USC § 2682 [1992]) and the Asbestos Hazardous Emergency Response Act (AHERA) provide the regulatory basis for handling ACM in school buildings. AHERA and OSHA regulations protect employees who encounter or remediate ACM.

Renovating or demolishing buildings with ACM can release asbestos fibers into the air by disturbing or damaging pipe and boiler insulation, acoustical ceilings, sprayed-on fireproofing, and other materials used for soundproofing or insulating. Only friable ACM, such as those listed above, are considered health risks. Nonfriable ACM, such as transite piping, shingles, or floor tile, are not health risks unless they are mechanically abraded to produce dust.

Polychlorinated Biphenyls

Polychlorinated biphenyls (PCBs), which are electrically nonconductive and stable at high temperatures, may be found in the dielectric fluids of electrical equipment, including transformers and capacitors, particularly if such equipment was manufactured before the early 1970s. PCBs also are found in other manufactured items, including light fixtures, ballasts, and hydraulic systems, and as plasticizers and fire retardants in many solid materials.

The US EPA regulates the disposal of equipment containing PCBs in concentrations of 50 parts per million (ppm) or greater under TSCA, which bans the manufacture, processing, and distribution in commerce of PCBs, with limited specific exceptions for some PCBs used in totally enclosed systems. US EPA disposal regulations distinguish between PCB-contaminated electrical equipment, defined as that containing PCBs in concentrations of 50 ppm or greater but less than 500 ppm, and electrical equipment, such as a PCB transformer, in which the concentration of PCBs is at least 500 ppm. Primary federal regulations for controlling existing PCBs are found in 40 CFR Part 761. California regulations, however, are more stringent than their federal equivalents and are found in Title 22 of the California Code of Regulations (CCR). Within California, a waste fluid containing 5 ppm PCBs or more is regulated as hazardous waste.

In accordance with Navy procedures and applicable federal and state regulations, Navy shore personnel must inventory annually all PCB waste that they generate, treat, store, or dispose of. The California Environmental Protection Agency's Department of Toxic Substances Control (DTSC) regulates PCBs as a non-RCRA hazardous waste. OPNAVINST 5090.1B specifies eliminating all transformers

containing 500 ppm or more PCBs by October 1998 and eliminating all transformers containing 50 ppm or more PCBs by October 2003.

Storage Tanks and Oil/Water Separators

Both USTs and aboveground storage tanks (ASTs) are used to store hazardous substances and petroleum products at locations throughout Navy bases. Because oil/water separators (OWSs) are often below ground and can create environmental issues similar to USTs, they are included in this discussion.

USTs are subject to federal regulations of RCRA (40 CFR § 280 [1997]), as mandated by HSWA. The state of California has adopted regulations under the California Code of Regulations (CCR, tit. 23, div. 3, ch. 16). California regulations are more stringent than the federal regulations and require secondary containment on both the tank and piping systems installed after January 1, 1984.

ASTs are regulated under the California Health and Safety Code (CCR, tit. 8, div. 20, § 6.7 [1992]), the Uniform Fire Code, and the National Fire Protection Association regulations. The mechanism used for cleaning up and preventing spills is SB 1050 of January 1990.

Fuel is transported and stored at Navy bases according to US EPA and Navy regulations. Each naval base has a fuel storage area, identified as a fuel farm, and fuels stored there may include jet fuel (JP-5), automobile gasoline, diesel fuel, used oil, and propane. Fuel is transported to the fuel farm by underground pipelines from off-base sources or delivered by tanker trucks to a receiving island. The fuels are stored in ASTs or USTs equipped with visible and audible high-level tank system leak alarms. Each naval base with air operations has aircraft refueling stations, which dispense JP-5 to aircraft.

Pesticides

The registration and use of pesticides are regulated under the Federal Insecticide Fungicide and Rodenticide Act (FIFRA) of 1972, as amended (7 USC §§ 136 et seq. [1991]). Pest Management activities are subject to federal regulations contained in 40 CFR §§ 162, 165, 166, 170, and 171, and California regulations contained in CCR Title 3, Chapter 4.

Lead

Lead was a major ingredient in house paint used throughout the country and at naval bases for many years. In 1978, the maximum lead content was reduced to 0.06 percent of newly applied dry paint. Lead-based paint (LBP) use was discontinued in 1980.

The US Department of Labor, OSHA regulates the exposure of employees to lead during construction work (29 CFR § 1926.1 [1997]). Although paints may be below the HUD definition for "lead-based paints," these paints may contain some lead and may result in lead exposure to workers if demolition practices, such as

torching and power-cutting, are used. Employees must be notified of lead hazards in the surroundings or in working conditions, and appropriate dust control and personal protective demolition procedures must be followed.

The TSCA addresses LBP hazards, and protects the general public from exposure to lead hazards.

Radon

Radon is a colorless and odorless radioactive gas produced by radioactive decay of naturally occurring uranium to radium. Radium, of which radon gas is a by-product, is found in high concentrations in rocks containing uranium, granite, shale, phosphate, and pitchblende. Atmospheric radon is diluted to insignificant concentrations; radon that is present in soil, however, can enter a building through small spaces and openings, accumulating in enclosed areas, such as basements. The cancer risk caused by inhaling radon is currently a topic of concern.

The amount of radon is measured in picocuries per liter of air (pCi/l). The average indoor level is estimated to be 1.3 pCi/l, and about 0.4 pCi/l of radon is usually found in the outside air (US Public Health Service 1989). There are no laws that require testing and remediating for radon, but EPA has made recommendations for both housing and schools. For short-term testing (two to 90 days), the most commonly used devices are charcoal canister, alpha-track, electret ion chamber, continuous monitor, and charcoal liquid scintillation detectors. For long-term testing (more than 90 days), alpha-track and electret ion detectors are commonly used. Long-term testing more accurately provides a year-round average radon level (US Public Health Service 1989).

The *Application of Radon Reduction Methods* (US EPA 1988) summarizes the recommended action level of 4 pCi/l. It also provides guidance for action and recommends the following action schedule:

- For radon concentrations greater than 200 pCi/l, action shall be initiated within a few weeks;
- For radon concentrations in the range of 20 to 200 pCi/l, action shall be initiated within several months;
- For radon concentrations in the range of 4 to 20 pCi/l, action shall be initiated within a few years (the higher the radon level, the more urgent the need for action); and
- For radon concentrations less than 4 pCi/l, no action is specifically recommended; however, many individuals may elect to further reduce radon concentrations in the range of 1 to 4 pCi/l.

3.12.1 NAS Lemoore Alternative

Affected Area

The affected area includes the proposed project locations for the aircraft, aircraft support facilities, and personnel support facilities.

Hazardous Materials Management

Hazardous materials are used in various operations throughout the base and are managed in accordance with NAS Lemoore Instruction (NASLEMINST) 4110.2. NAS Lemoore has submitted a list of chemicals and emergency planning information in compliance with the Emergency Planning and Community Right-to-Know Act (40 CFR §§ 301-311 [1997]) (US Navy 1994d).

Hazardous materials used on the base include lubricants, degreasers, cleaners, paint strippers, solvents, acids, and pesticides (US Navy 1994d). Most of the hazardous materials are used for airfield operations and industrial support. These materials are used at the following locations:

- Buildings 217, 218, 247, 248, 277, 278, 307, 308, 337, and 338 High Speed Refuelers;
- Building 170 Jet Maintenance Shop (aircraft paint, plating, and cleaning);
- Buildings 173, 174, and 175 Turbo-Jet Engine Test Cells;
- Building 179 Ground Equipment Maintenance Facilities;
- Building 188 Air Frames Shop; and
- Building 722 Drinking Water Treatment Plant.

Buildings 774 and 775 house the supply storage area for flammable liquids, gases, and solids used throughout NAS Lemoore. A separate paint storage area used by the Department of Public Works also is located within the warehouse (US Navy 1994d). Small quantities of hazardous materials are used for cleaning and other maintenance operations throughout the base. Hazardous materials are not stored at any of the proposed project sites. Hazardous materials are delivered and picked up daily for transfer to the satellite accumulation area (Mora 1997).

Hazardous Waste Management

NAS Lemoore possesses an active EPA generator number and generated approximately 280 tons (254 metric tonnes) of hazardous waste in 1993. Hazardous wastes are generated from aircraft-related activities and consist primarily of asbestos, contaminated soil, empty containers, waste asphalt, waste paint, contaminated jet fuel, spill residues, ethylene glycol, waste methyl alcohol, and waste cleaning compounds (US Navy 1994d). The only extremely hazardous wastes regularly generated are PCB-containing ballast fluids and waste mercury (US Navy 1994d).

Hazardous wastes are collected daily from satellite accumulation areas throughout the base and are transferred to the Department of Public Works hazardous waste storage compound (Building 748), where they are stored for up to 90 days. The wastes then are manifested and transported off the base by Laidlaw Environmental Services under contract with the Defense Revitalization and Marketing Office (DRMO). The wastes are transported to Laidlaw treatment, storage, and disposal facilities on the East Coast (Smith 1997). Hazardous wastes are not stored at any of the proposed project sites but are picked up daily for transfer to the satellite accumulation area (Mora 1997).

Installation Restoration Program Sites

Based on results of a 1984 initial assessment study (IAS), a 1986 verification phase/confirmation study, and California Department of Health Services (DHS) and NAS Lemoore recommendations, 17 potentially contaminated sites were identified for inclusion in the IRP. An RI/FS final work plan was completed for the hazardous waste disposal sites and contaminated areas caused by past hazardous waste storage, handling, or disposal practices at NAS Lemoore. Two of the sites have been combined for further investigation due to their proximity (US Navy 1994d). Table 3-32 identifies sites within a 0.25-mile (0.4-km) radius of the proposed project sites for this alternative. There are no IRP sites within a proposed project location.

Table 3-32
IRP Sites within One Quarter Mile of the Proposed Project Locations at NAS Lemoore

Site Number	Site Name	Approximate Location
2	Pesticide rinse area (Building 752)	1,300 feet (396 m) northeast of the proposed NAMTRA project location. 1,300 feet (396 m) north of the proposed counseling and assistance center project location.
3	Pesticide rinse area (Building 50)	500 feet (152 m) south of the proposed airframes shop project location.
5/9	Fire fighting school /industrial treatment sludge ponds	1,000 feet (305 m) southwest of the proposed airframes shop project location.
10	Landing strip	1,300 feet (396 m) north of the proposed BEQ project location.
11	PCB-contaminated soil (Building 3)	400 feet (122 m) northeast of the proposed strike fighter weapons school project location.
13	Transformer storage area (Building 50)	500 feet (152 m) southwest of the proposed airframes shop project location.
14	UST fuel spills (Building 173 and 174)	500 feet (152 m) east of the proposed airframes shop project location.
16	Sludge drying beds and pond (north of Building 65)	1,000 feet (305 m) southeast of the proposed strike fighter weapons school project location. 1,100 feet (335 m) southwest of the proposed airframes shop project location.

Source: Uribe and Associates 1994

All identified IRP sites are being investigated and, if deemed necessary, will be remediated. Remedial action is completed according to the requirements of the Central Valley RWQCB, Kings County, and the California DTSC.

Asbestos

Asbestos surveys of facilities were conducted in two phases; the initial phase was conducted from October through December 1992, and the follow-up second phase was conducted from September through November 1993. Friable or damaged ACM identified in this survey were abated. As buildings are renovated, ACM will be abated if it presents a potential health and safety concern. Although ACM remains in buildings on the base, it is nonfriable and does not represent a threat to persons working in these areas (Mora 1997).

Polychlorinated Biphenyls

There are three transformers on the base containing PCB concentrations less than 5 ppm. Transformers that were determined to contain PCB concentrations above 5 ppm have had the dielectric fluid replaced with non-PCB fluid (Smith 1997).

There is no PCB equipment or PCB-contaminated equipment at any of the proposed project locations. In addition, there is no record of any PCB equipment or PCB-contaminated equipment at any of these locations. PCB-containing electrical equipment, such as light fixtures and ballasts, may be present at the proposed project locations (Smith 1997).

There have been no known releases of dielectric fluid or transformer explosions at any of the proposed project locations (Smith 1997).

Storage Tanks and Oil/Water Separators

Both USTs and ASTs are used to store hazardous substances and petroleum products throughout the base. There are 30 USTs, ranging in capacities from 4,122 gallons (15,603 l) to 596,262 gallons (2,257,090 l), and 44 ASTs, ranging from 10 gallons (31 l) to 8,000 gallons (30,283 l) in capacity, on the base (US Navy 1997g, 1997h). These tanks store waste oil and fuel for generator, vehicle, and aircraft operations at the base.

JP-5 jet fuel is transported to NAS Lemoore via a pipeline from Fresno. The pipeline terminates at the fuel farm in the south Operations Area where six JP-5 USTs have a combined total capacity of 2,624,000 gallons (9,932,890 l). From these receiving tanks, jet fuel is distributed by pipeline to five 119,478-gallon (452,260-l) USTs, each adjacent to the aircraft parking aprons and hangars on the base. These tanks in turn supply ten high-speed aircraft refueling stations in the operations area of the base, two at each of the five hangars (US Navy 1994d).

The refueling stations are at Buildings 217, 218, 247, 248, 277, 278, 307, 308, 337, and 338. Each station includes a 125,000-gallon (473,175-l), single-walled UST for JP-5 equipped with high/low-level alarms and high-level shut-off valves. The tanks and piping are wrapped and have cathodic protection. Fuel supplied to the refueling stations passes through filters in a filter room near each UST (US Navy 1994d).

Jet engine test cell 3 (Building 175) is served by one 20,000-gallon (75,703-l) JP-5 UST, and test cell 2 (Building 174) is served by a partially excavated 10,000-gallon (37,854-l) JP-5 UST. There is a 500-gallon (1,873-l) AST outside Building 175 that stores preservation oil. A starting engine test cell and AST (less than 500 gallons [1,873-l]) in the storage yard of Building 175 have no secondary containment (US Navy 1994d).

An external fuel tank storage area near the aircraft apron provides secure storage of external fuel tanks not used for flight operations and spares. The existing rack system is designed to store 330-gallon (1,249-l) external fuel tanks (US Navy 1997j).

Fifty USTs have been removed from the base, and five USTs are in the process of closure and await removal. Fifteen of these removed USTs have been reported as leaking, and site monitoring is being conducted under RWQCB oversight (Ike 1997).

NAS Lemoore has implemented a spill prevention and countermeasure (SPCC) plan for the base (NASLEMINST 5090). Spill response equipment is stored at each fuel storage area, and the fire department responds to any spills over five gallons on pavement and any spills to soil or water (US Navy 1994d).

There are three active OWSs at NAS Lemoore. One is at Building 765 (Public Works Transportation [PWT]), one at the MRW car wash, and one at Building 945 (Hobby Shop). Water collected in the units is discharged to the sanitary sewer. There are no OWSs at any of the proposed project locations (Mora 1997).

Pesticides

Pesticides are applied throughout the base by certified station or contracted personnel. Past usage includes common pesticides, such as chlordane and dichlorodiphenyltrichloroethane (DDT), which were banned in 1988 and 1971, respectively. NAS Lemoore implements a pest management plan that specifies the area to be treated, the type of pest, the frequency of application, the pesticide product name and EPA registration number, the mixing concentration, and any special precautions or remarks (US Navy 1997i).

Soil samples were collected from potential sources of pesticide contamination in June 1997. Stormwater drainage ditches, Building 752, Building 50, the former landing strip used by crop dusting aircraft, and west of PWT (contractor rinse area) were sampled to determine the presence of residual pesticides. The sampling program was part of the IR environmental investigation conducted through the IRP (Crane 1997). Although analytical results indicated that pesticides and their constituents were detected in the samples, a human health risk assessment and ecological risk assessment determined that these sites do not pose an unacceptable risk to human health or the environment (US Navy 1997i).

Lead

NAS Lemoore has not conducted an LBP survey of the residential buildings on the base. DOD regulations do not require surveying nonresidential structures for LBP, but LBP is likely to be present in buildings constructed before 1978.

Ordnance

Ordnance is loaded aboard aircraft at the outboard areas of the aircraft parking aprons in the combat aircraft ordnance area. This practice requires parked aircraft to be towed out of the ordnance area and portions of maintenance hangars to be evacuated during loading procedures. No known ordnance manufacture, storage, or disposal have been conducted at any of the proposed project locations (Winckelmann 1997).

Radon

The Navy conducted a radon facility screening survey of all buildings and housing at the installation in November 1989. No radon concentration above the action level of 4 pCi/l was detected at base facilities or housing units, and no further action is planned based on these results (Hudson 1997).

3.12.2 NAF El Centro Alternative

Affected Area

The affected area includes the proposed project locations for the aircraft, aircraft support facilities, and personnel support facilities.

Hazardous Materials Management

Hazardous materials are used in various operations throughout the base and are managed in accordance with the Hazardous Materials Management Plan of September 26, 1997. NAF El Centro has submitted a list of chemicals, in compliance with Section 311 of the Emergency Planning and Community Right-to-know Act (EPCRA), and emergency planning information, in accordance with Section 302 of EPCRA (Bay 1997). Hazardous materials are used and stored at proposed project sites in the operation and shop areas.

Hazardous materials used by divisions, departments, and tenants on the base are listed on the authorized user list, which is submitted to the Hazardous Materials Division. Most of the hazardous materials are used at operation and shop areas. Each department has its own hazardous materials storage locker, but the Hazardous Materials Center stores the reusable hazardous materials. Small quantities of hazardous materials also are used for cleaning and other maintenance operations throughout the base.

Hazardous Waste Management

Hazardous wastes are generated by NAF El Centro operations and by tenant activities. According to the NAF El Centro Hazardous Waste Annual Report, the total amount of hazardous waste generated in 1997 was approximately 432 tons

(392 tonnes). These wastes are stored, recycled off-site, or disposed of off-site. The wastes consisted primarily of asbestos, sludge, and ordnance (US Navy1997p). Hazardous wastes are properly stored at proposed project sites within operation and shop areas. These wastes are collected and transferred to accumulation areas for temporary storage, pending disposal.

Hazardous wastes generated at NAF El Centro are collected, packaged, and transferred from user/work areas to 29 approved less-than-90-days accumulation points for temporary storage. The hazardous wastes then are transferred to the central (less-than-90-days accumulation point) hazardous waste storage area where they are manifested and transported off the base (Bay 1997). ELTEX Chemical, under contract with the Defense Reutilization and Marketing Office (DRMO), transports the hazardous wastes to its processing facility in Houston, Texas (Tousseau 1997).

Installation Restoration Program Sites

In accordance with the IRP, preliminary assessments were conducted at NAF El Centro to identify potentially hazardous disposal sites and contaminated areas caused by past hazardous waste storage, handling, or disposal practices. Seventeen potentially contaminated sites were identified, and recommendations have been made for further investigation of 15 of the 17 sites (US Navy 1990a). Two additional sites were closed by the DTSC in August 1997.

Under the IRP, all 13 sites are being investigated and, if deemed necessary, will be remediated. In addition to the site investigations, the Colorado River Basin RWQCB has required hydrogeological assessment reports at sites 10 and 17 and solid waste assessment tests at sites 1, 2, and 3, in accordance with the Toxic Pits Cleanup Act (US Navy 1990a). Remedial action will be completed according to the requirements of the Colorado River Basin RWQCB, Imperial County, and the California DTSC.

Table 3-33 identifies IRP sites within a 0.25-mile (0.4-km) radius of the proposed project sites for this alternative. There are no IRP sites identified within the proposed project locations.

Asbestos

An asbestos survey has been conducted at NAF El Centro, and 221 buildings were inspected for ACM by the Navy industrial hygienist. Suspect ACM was sampled and analyzed by a Navy laboratory. Of the 221 buildings, 174 reportedly contain ACM. ACM that could become friable was removed during the inspection. Family housing was not included in the survey because ACM had been removed prior to the inventory. Approximately 25 buildings have not been surveyed for ACM and are scheduled for inspection in fiscal year 1998 (Bay 1997). ACM present at proposed project sites and other locations will be abated during renovation activities if it presents a potential health and safety concern.

Table 3-33
IRP Sites within One Quarter Mile of the Proposed Project Locations at NAF El Centro

Site Number	Site Name	Approximate Location
1	Magazine Road Landfill	750 feet (229 m) north of the proposed parallel runway 2 project location.
2	Patrol Road Landfill	200 feet (61 m) south of the proposed parallel runway 2 project location. 750 feet (229 m) east of the proposed taxiways project location.
8	Scrapyard	500 feet (152 m) north of the proposed parallel runway 2 project location.
12	Fuel farm tank rinseate disposal area	1,000 feet (305 m) south of the proposed engine test cell project location. 1,100 feet (335 m) south of the proposed engine maintenance shop project location.
13	Fuel farm filter cleaning area	500 feet (152 m) southeast of the proposed engine test cell project location. 600 feet (183 m) southeast of the proposed engine maintenance shop project location. 1,000 feet (305 m) southeast of the proposed airframes shop project location.

Source: US Navy 1988a

Polychlorinated Biphenyls

There are approximately 58 PCB-containing transformers (PCB concentrations less than 50 ppm) on the base. These transformers are scheduled for removal and replacement with non-PCB transformers in October 1997 (Bay 1997). No PCB equipment or PCB-contaminated equipment is present at any of the proposed project sites. PCB-containing electrical equipment, such as light fixtures and ballasts, may be present at the proposed project sites but are scheduled for removal.

There have been no known releases of dielectric fluid or transformer explosions at any of the proposed project sites.

Storage Tanks and Oil/Water Separators

NAF El Centro is surveying the status of all abandoned and removed USTs and assessing regulatory compliance of all operational USTs. The base also is aggressively implementing a program to replace all USTs with ASTs when this option is the most feasible method of obtaining or maintaining compliance. The Underground Storage Tank Management Plan (US Navy 1995d) provides NAF El Centro with guidance on effective management approaches for achieving and maintaining compliance with all UST requirements and implementing preventive measures to avoid an unauthorized release from a UST.

JP-5 is transported to NAF El Centro by pipeline from a fuel storage facility operated by Southern Pacific Pipeline near the city of Imperial. The pipeline is located along Aten Road and delivers jet fuel at a rate of 155 barrels per hour. Jet fuel also is delivered to NAF El Centro by truck. The pipeline terminates at the

fuel farm in the southeastern section of the base where three JP-5 storage tanks have a combined capacity of 1,174,000 gallons (4,444,060 l) (US Navy 1995d).

Two active JP-5 jet fuel USTs at the fuel farm are owned and operated by NAF El Centro. There is one 567,000-gallon (2,146,322-l) UST at H-13 and one 40,000-gallon (15,416-l) UST at H-14. There is an additional active 500-gallon (1,893-l) JP-5 UST on the base at I-15, but it is owned and operated by Santa Fe Pacific Pipeline (US Navy 1995d).

Although 89 USTs are documented as having been removed, there are approximately 72 suspected UST locations on the base (Bay 1997). USTs are considered suspect either when information indicates that a tank may be present but the presence cannot be confirmed or when information indicates that a UST has been removed or abandoned but no documentation is available (US Navy 1995d).

Fifty-three ASTs are present on NAF El Centro, and an SPCC plan has been implemented for the base. Spill response equipment is stored at each fuel storage area, and the fire department responds to any spills over five gallons (19 l) on pavement and to all spills to soil or water. Fuel releases at the base have been remediated, and the sites have been approved for closure (Bay 1997).

There is one closed-loop system at the car wash, and the wastewater is recycled. No engine cleaning, radiator draining, or any activity that would contaminate the system is allowed. An aircraft wash area is also available and collects wastewater. Samples collected from this water have indicated the presence of less than one-percent oil. Because any petroleum, oil, or lubricant-contaminated water is allowed to be dumped in this area and because the hazardous waste concentration is below regulatory limits, no permits have been issued for these systems (Bay 1997).

Pesticides

A contractor applies pesticides monthly and on an as-needed basis throughout the base. Past usage included common pesticides, such as chlordane and DDT, which were banned in 1988 and 1971, respectively. NAF El Centro implements a pest management plan that specifies the terrain to be treated, the type of pest, pesticide product name and EPA registration number, and the mixing concentration or rate of application. Soil samples have not been collected to determine the presence of residual pesticides (Gallant 1997).

Lead

NAF El Centro conducted an LBP survey of the residential buildings on the base. Buildings containing LBP are being remediated systematically and on an as-needed basis (Bay 1997).

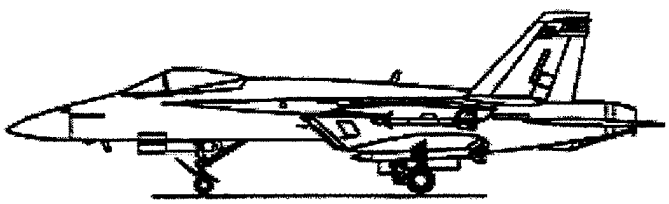
DOD regulations do not require the survey of nonresidential structures for LBP, but LBP is likely to be present in buildings constructed before 1978.

Ordnance

Ordnance is loaded aboard aircraft at the outboard areas of the aircraft parking aprons in the combat aircraft ordnance area. This practice requires parked aircraft to be towed out of the ordnance area and portions of maintenance hangars to be evacuated during loading procedures. No known ordnance manufacture, storage, or disposal have been conducted at any of the proposed project locations (Bay 1997).

Radon

An initial radon facility screening survey of all housing at the installation was conducted, and no radon concentrations above the action level of 4 pCi/l were detected. No further action is planned at the housing units based on these results. A second radon screening at the base is in progress and is scheduled to be completed in fiscal year 1998 (Bay 1997).



4.0 ENVIRONMENTAL CONSEQUENCES

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CHAPTER 4
ENVIRONMENTAL CONSEQUENCES

This chapter describes potential environmental consequences associated with implementing the proposed action at NAS Lemoore and NAF El Centro. The Council on Environmental Quality regulations on implementing NEPA state that the environmental consequences discussion shall include direct effects and their significance and indirect effects and their significance (40 CFR § 1502.16 [1997]). Direct effects are caused by the action and occur at the same time and place (40 CFR § 1508.8 [1997]). Indirect effects are caused by the action and occur later or at a greater distance but are still reasonably foreseeable (40 CFR § 1508.8 [1997]).

Impacts for the resource areas described in Chapter 3 are presented for each alternative. The resource area discussions begin with an introduction that includes planning issues for the resource area and is followed by the criteria used to determine the significance of an impact. Significant impacts and mitigation measures are numbered; less than significant impacts, including those that are beneficial, are listed separately from the significant impacts and are not numbered. Unavoidable impacts that cannot be mitigated to a less than significant level also are identified. Mitigation measures are identified for any impact determined to be significant.

Complete implementation of the proposed action at each alternative base is assumed in determining impacts. At NAS Lemoore the proposed action would result in an increase of 92 aircraft and 4,900 military personnel and family members. At NAF El Centro the proposed action would result in an increase of 164 aircraft and 9,088 military personnel and family members.

4.1 LAND USE AND AIRSPACE

This section identifies potential consequences to land use and airspace from F/A-18E/F facility construction and aircraft operations at NAS Lemoore and NAF El Centro. The impact analysis compares projected conditions, after construction of F/A-18E/F facilities and aircraft arrival, to the affected areas described in Section

3.1, Land Use and Airspace. The analysis evaluates compatibility with on-base and regional land uses, consistency of land use changes with the AICUZ program standards, and impacts upon existing air operations resulting from implementation of the proposed action.

Significance Criteria

Within a Navy facility, the base master plan and the AICUZ program identify land use designations and standards for land use compatibility based on noise and safety conditions (see Figure 3-4 for AICUZ land use compatibility criteria). County master plans designate land uses off-base, but consistency with AICUZ recommendations also is encouraged. F/A-18E/F facility development or aircraft operations would cause significant land use impacts if they would be incompatible with existing land uses and land use/noise standards or would be located in accident potential zones. Impacts to airspace operations would occur if the proposed action were to affect the way airspace is being used. Table 4-1 summarizes the potential impacts to land uses and airspace identified in this analysis.

Table 4-1
Summary of Land Use and Airspace Impacts

Impact Issues	NAS Lemoore	NAF El Centro
Compatibility with on-base land uses	○	◐
Consistency with AICUZ land use compatibility guidelines: safety	○	○
Consistency with AICUZ land use compatibility guidelines: noise	◐	◑
Exceedance of imaginary surface restrictions	◐	◑
Compatibility with regional land uses	◐	◐
Impacts to airspace operations	◐	◐

LEGEND:
● = Significant and not mitigable impact
◑ = Significant but mitigable impact
◐ = Less than significant impact
○ = No impact

4.1.1 NAS Lemoore Alternative

Less than Significant Impacts

Compatibility with on-base land uses. Implementing the proposed project at NAS Lemoore would not significantly affect existing land uses where new structures are compatible with these uses. Projects associated with the F/A-18E/F aircraft and personnel would be consistent with existing land uses as described below.

The FRS hangar, NAMTRA, strike fighter weapons school, fleet hangar, airframes shop, and engine maintenance shop would be expanded to meet the needs of the F/A-18E/F aircraft. The expansion of the existing uses would not change the land use. The proposed aviation armament shop would be constructed within an area

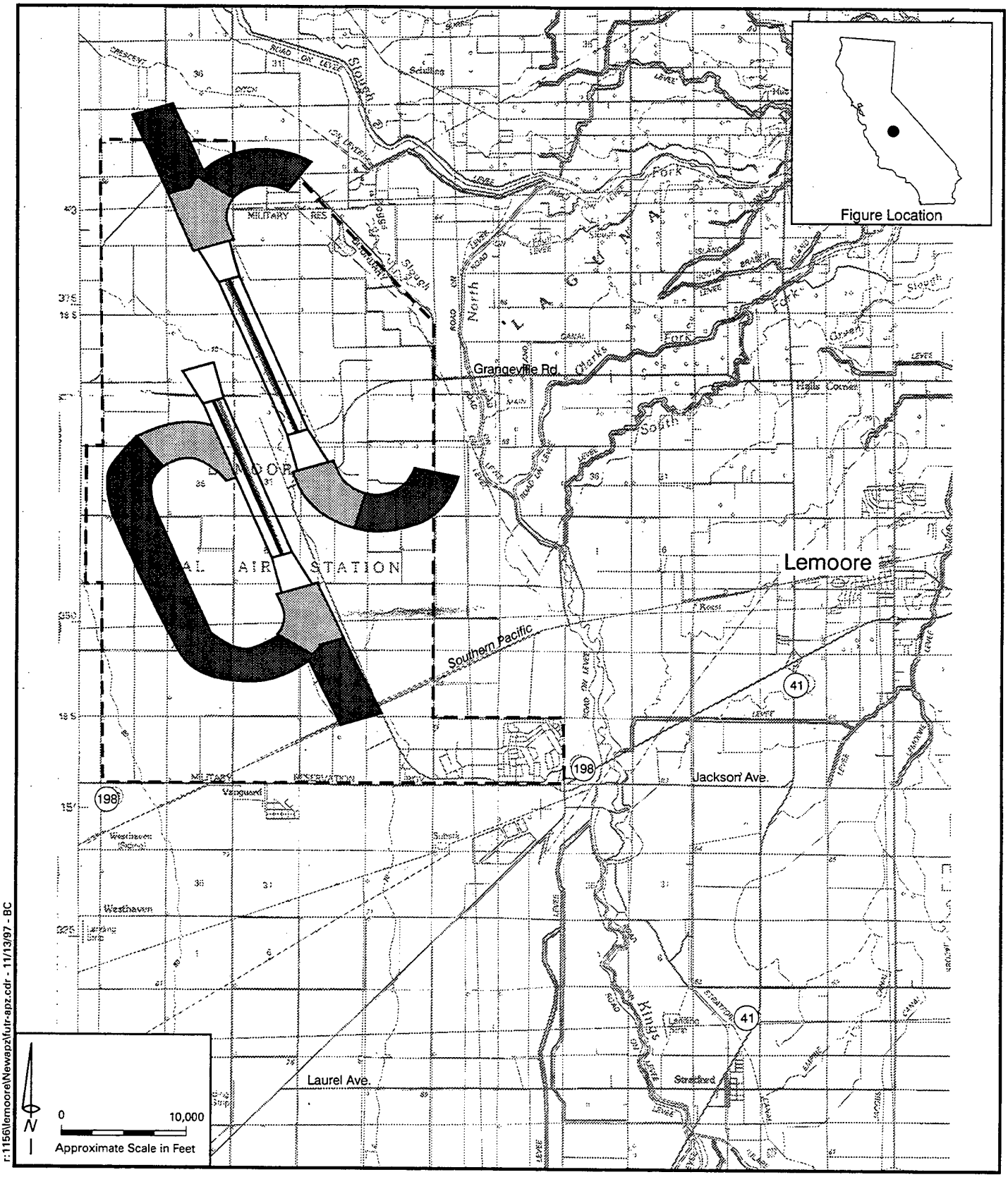
designated for supply uses, the BEQ would be constructed in an area designated for personnel support, and the child development center would be constructed in an area designated for recreation. These proposed uses are consistent with these designations and existing land uses in these areas. The counseling center, youth center, and family housing complex would be built on undeveloped land in areas containing support facilities. Existing land uses in these areas are consistent with these proposed uses. There would be no significant impacts to on-base land uses associated with implementation of this project, and no mitigation would be required.

It is unlikely that the conversion of on-base agricultural outlease land in a predominantly developed area would constitute a significant impact to agricultural production. The Farmland Protection Policy Act (FPPA) would not apply because Section 658.3 of the legislation would exempt farmland converted for national defense (Bunter 1997). No mitigation would be required.

Consistency with AICUZ land use compatibility guidelines: safety. APZ designations would be modified as a result of implementing the proposed action at NAS Lemoore (Figure 4-1). As a result, APZII designations would extend slightly beyond the base boundaries to the east and northeast; however, these modifications would not result in any incompatibilities with existing, off-base land uses. All existing, on-base facilities and proposed F/A-18E/F support facilities would be outside the modified APZs. There would be no impacts from safety restriction violations, and no mitigation would be required.

Consistency with AICUZ land use compatibility guidelines: noise. A less than significant impact would occur at NAS Lemoore from the location of facilities relative to CNEL contours. Construction or expansion activities would be required to include implementation of noise attenuation measures to reduce noise to levels compatible with AICUZ noise guidelines. Future noise contours most proximate to NAS Lemoore with the proposed action are shown on Figure 4-2. Three proposed facilities at NAS Lemoore would require noise attenuation: the BEQ, the NAMTRA, and the strike fighter weapons school. The BEQ would be in a noise environment exceeding 65-dB CNEL; the NAMTRA would be in a 65- to 75-dB CNEL, and the strike fighter weapons school would be in a 80-dB CNEL contour. Development of these facilities would include noise attenuation measures. All other facilities would be consistent with the AICUZ noise guidelines, and no mitigation would be required. Impacts to the noise environment from the proposed action are discussed in Section 4.7, Noise.

Exceedance of imaginary surface restrictions. Proposed facilities to support the F/A-18E/F squadrons would not exceed imaginary surface restrictions. Facilities proposed for the operations area are between two runways and outside the primary surface of each. These facilities would be within the inner horizontal surface, but they would not exceed the 150-foot (46 meters) restriction. Proposed



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The APZs for NAS Lemoore extend beyond the northern boundaries of the base.

LEGEND:

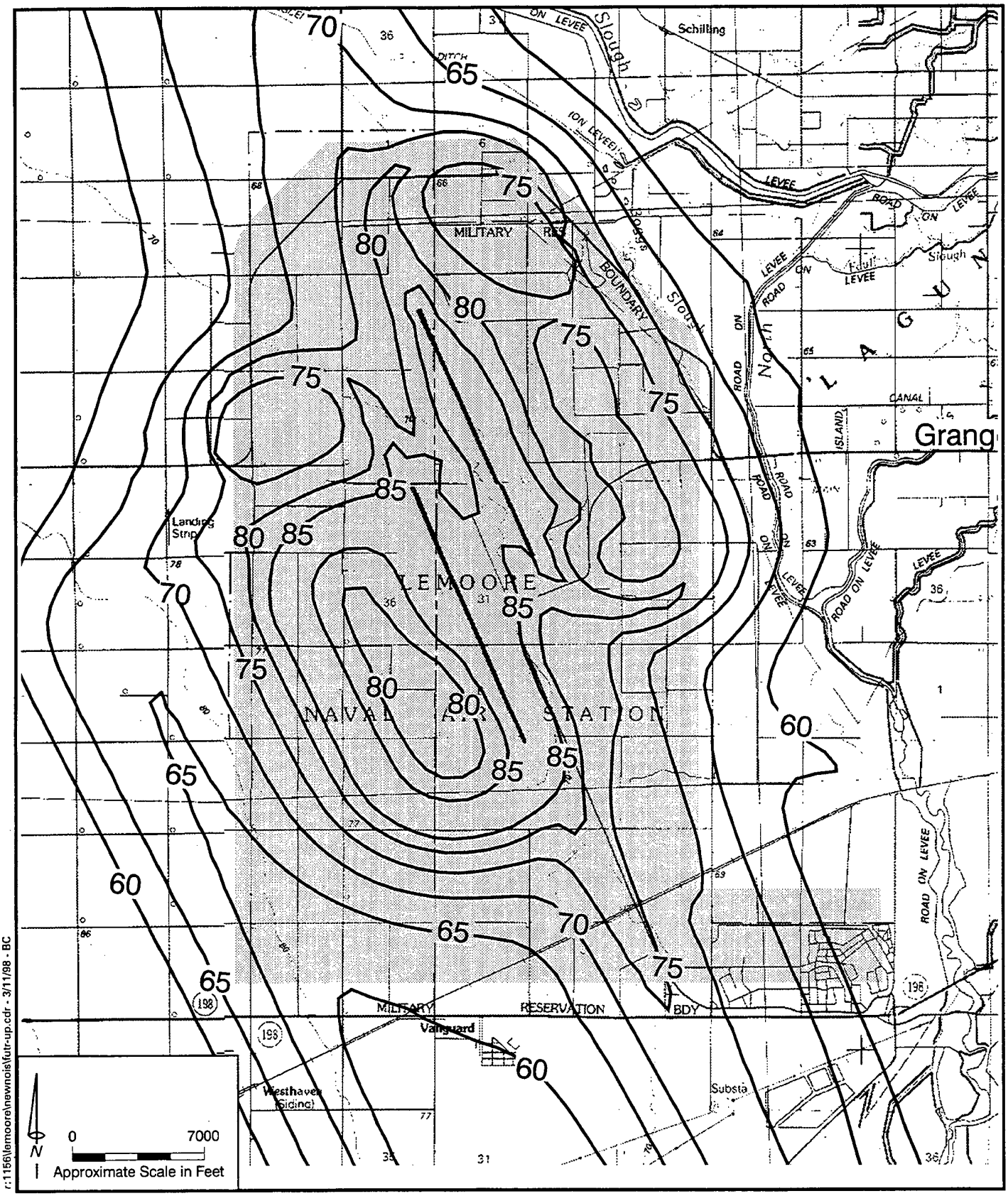
- Clear Zone
- Accident Potential Zone I
- Accident Potential Zone II
- NAS Lemoore

NAS Lemoore Proposed Action Accident Potential Zones

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: Wyle 1997

Figure 4-1



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Future on-base noise contours exceed levels associated with most noise sensitive.

LEGEND:

—75— Community Noise Equivalent Level (CNEL)

NAS Lemoore

NAS Lemoore
Proposed Action Noise Contours

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: Wyle 1997.

Figure 4-2

facilities in the housing and administration areas are in the approach-departure clearance surface but would not exceed the height restrictions for these imaginary surfaces. There would be no significant impacts to aircraft navigation from these structures, and no mitigation would be required.

Compatibility with regional land uses. Implementing the proposed action at NAS Lemoore would not significantly affect regional land uses. Airfield operations at NAS Lemoore are protected from encroachment by Fresno and Kings counties, which both have general plan policies that encourage agricultural production and limit building heights near the base.

As shown in Table 4-2, basing the F/A-18E/F aircraft at NAS Lemoore would add 7,462 sorties to the transit routes between NAS Lemoore and the R-2508 Complex. The total sorties from NAS Lemoore to the R-2508 Complex would be 17,362 by 2004. Commercial air traffic along this route would total 48,905 flights in 2004, assuming a 4 percent per year increase. Air National Guard flights are expected to remain constant. This would result in approximately 68,710 total flights along this corridor in 2004.

Table 4-2
Overflight of Sequoia and Kings Canyon National Parks by Aircraft

National Park Transits	1997	Increase in Flights	2004
NAS Lemoore Traffic	9,900	7,462	17,362
Commercial Air Traffic	38,207	10,698	48,905
Air National Guard Traffic	2,443	–	2,443
Total	50,550	18,160	68,710

The transit routes to R-2508 could accommodate the additional 92 aircraft from the proposed action at NAS Lemoore. These flights would occur in established transit routes, at altitudes of 19,000 to 23,000 feet (5,791 to 7,010 m) msl (generally at least 6,000 feet [1,828 m] AGL), and would have a brief residence time above any national park or wilderness area. No significant impact to the national parks or wilderness areas below the transit routes would be expected.

In addition, if the fourth fix point (Fangg) proposed by the Navy, the R-2508 CCB, and the Fresno Air National Guard is approved by the FAA, it would be available to the F/A-18E/F aircraft at NAS Lemoore (see Section 3.1, Land Use and Airspace). The effect of this new route on national park and wilderness areas cannot be accurately determined at present since this fix point has not been approved, the final location has not been established, and the anticipated distribution of flights between the transit routes is not known. The addition of another transit route could potentially minimize overflight effects by distributing the same number of flights among three primary routes instead of two.

The additional operations generated by the proposed action could be accommodated by the R-2508 Complex. By the end of Phase 2 of the proposed action (2010), annual sorties from NAS Lemoore to the R-2508 Complex would be approximately 12,753, as compared to 16,785 sorties at the end of Phase 1 (2004) and 9,900 sorties in 1997. This level of increase spread throughout the year and throughout the R-2508 Complex would not result in a significant impact to land uses beneath the R-2508 Complex.

Flights in violation of the 3,000-foot (914 m) AGL restriction in transit to or within R-2508 would not be expected to increase as a result of the proposed action. Violations of altitude restriction within the R-2508 Complex would continue to be handled through the CCF complaint process (see Section 3.1 Land Use and Airspace). Impacts to the noise environment in the transit routes to the R-2508 Complex and within the R-2508 Complex are discussed in Section 4.7, Noise, and detailed analysis is provided in Appendix F.

The proposed project would add approximately 1,150 sorties to the 24 MTRs used by aircraft stationed at NAS Lemoore. Based on this projected increase and an equal distribution among the 24 MTRs, the proposed project would add approximately 50 sorties per year to each MTR. All 24 MTRs would be capable of accommodating this increased level of usage. As discussed in Section 3.1, none of the MTRs passes over sensitive land uses such as national parks or wilderness areas with the exception of VR-1257.

Use of VR-1257 would increase by approximately 30 percent with the proposed action from the current 163 sorties to 213 sorties per year. This would represent an increase of approximately one sortie per week. Sensitive land uses beneath VR-1257, such as Joshua Tree National Park and Anza-Borrego Desert State Park, would not be measurably impacted by this increase. Impacts to the noise environment in VR-1257 is discussed in Section 4.7, Noise, and detailed analysis is provided in Appendix F. There would be no significant impacts associated with regional land uses, and no mitigation would be required.

Impacts to airspace operations. The increase in numbers of flights at NAS Lemoore from the F/A-18E/F squadrons would not significantly affect flight operations. Airfield use and flight operations in the airspace above the airfield would increase by approximately 70 percent. An air traffic control specialist at NAS Lemoore indicated that this increase could be accommodated within established operational procedures and flight patterns (Vaughan 1997). No changes in airfield operations or airspace designations would be necessary to operate and train the F/A-18E/F aircraft squadrons. No mitigation would be required.

4.1.2 NAF El Centro Alternative

Significant Impacts

Impact 1. Consistency with AICUZ land use compatibility guidelines: noise. A significant but mitigable impact would occur at NAF El Centro from locating administration, personnel support, a child development center, and housing facilities in an 85-dB CNEL noise contour (Figure 4-3). No other feasible sites have been identified for these buildings. The AICUZ identifies these uses as clearly incompatible with this noise level.

Mitigation 1. Do not locate the facilities within the boundaries of NAF El Centro. Identify areas off-base for these facilities that would provide compatible noise environments. Work with local agencies and the communities to implement development plans for these facilities. Should the action be located at NAF El Centro, off-base property would be procured for developing these facilities.

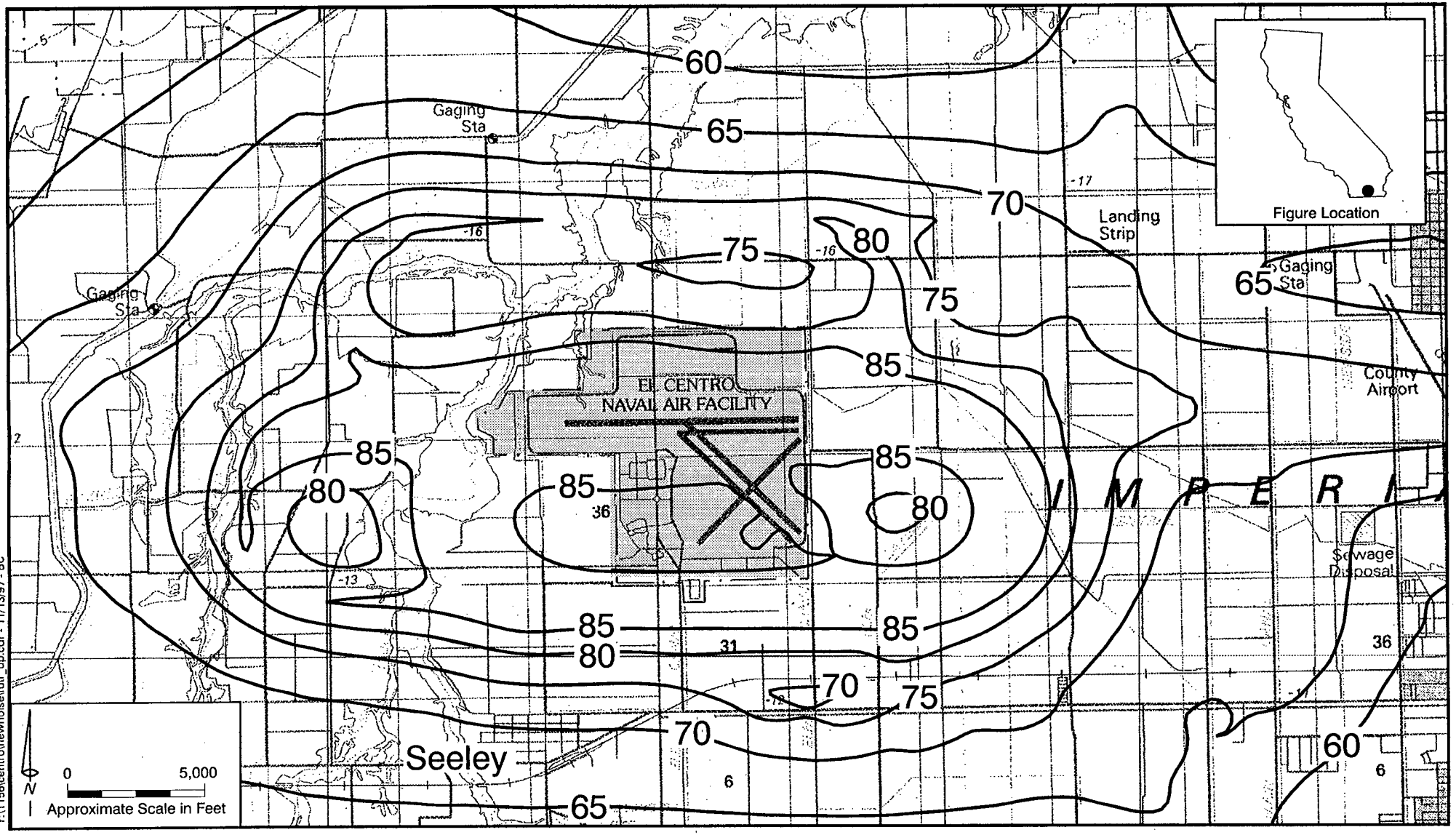
Impact 2. Exceedance of imaginary surface restrictions. A significant but mitigable impact would occur at NAF El Centro from locating F/A-18E/F facilities within the helicopter imaginary surface restrictions. The proposed general warehouse, aviation life support system shop, and battery shop would be in this area. The general warehouse could exceed the 150 foot (46 m) height restriction for the helicopter imaginary surface at the end of Runway 3. No other feasible sites have been identified for these buildings.

Mitigation 2. The Navy would modify the approach-departure path of the helicopter pad to avoid new structures. Implementing this mitigation would reduce impacts to a less than significant level.

Less than Significant Impacts

Compatibility with on-base land uses. Implementing the proposed action at NAF El Centro would not significantly affect existing land uses. The runways, taxiways, FRS hangar, fleet hangars, airframes shop, engine maintenance shop, engine test cell, avionics shop, aviation armament shop, aviation life support system shop, external fuel storage, and battery shop all would be constructed in an area designated for aircraft operations and training. The enlisted personnel club, exchange food service, commissary, credit union, religious ministry facility, and BOQ would be constructed in a personnel support area. The enlisted personnel dining facility, BEQs, and the child development center would be constructed in a housing area. The crafts hobby shop, automotive hobby shop, equipment rental center, bowling center, fitness center, indoor playing courts, and youth center would be constructed in an area designated for recreation.

The family housing, NAMTRA, strike fighter weapons school, flight simulator, aircraft ground support equipment shed, ground support equipment holding shed, general warehouse, general storage shed, open storage area, and administrative



Future on-base noise contours exceed levels associated with most noise sensitive land uses.

LEGEND:

— 75 — Community Noise Equivalent Level (CNEL)

NAF El Centro

NAF El Centro
Proposed Action Noise Contours

Facility Development for West coast Basing of the F/A-18E/F Aircraft

Source: Wyle 1997.

Figure 4-3

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offices would be constructed on undeveloped land currently used for open space/agricultural outlease. Constructing facilities in this area would not constitute a significant land use impact since the proposed uses would be similar to the adjacent existing uses. There would be no significant impacts to on-base land uses associated with implementation of this project, and no mitigation would be required.

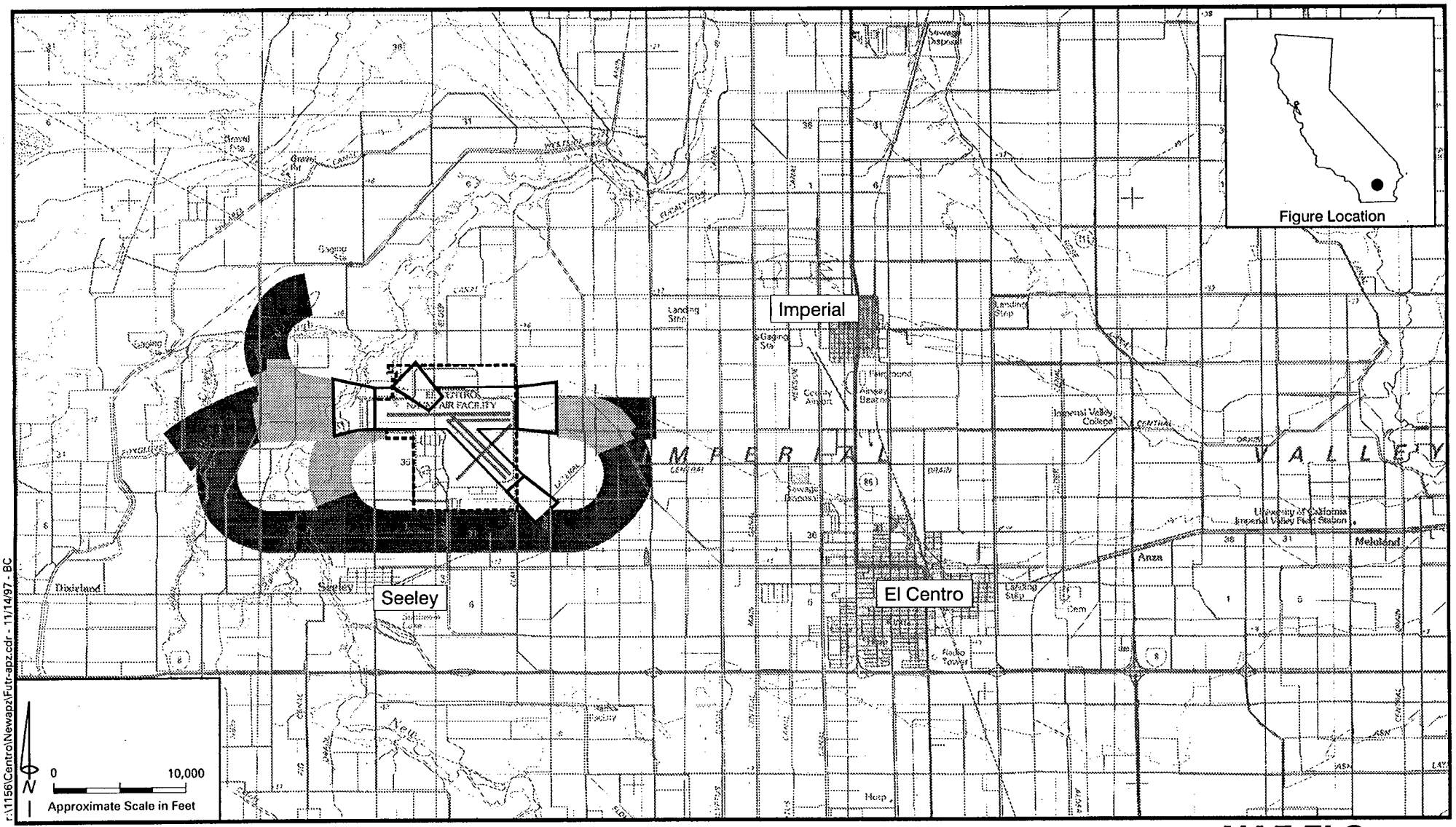
It is unlikely that the conversion of agricultural outlease land that is on-base and in a predominantly developed area would constitute a significant impact to agricultural production. The FPPA would not apply because Section 658.3 of the legislation would exempt farmland converted for national defense (Bunter 1997). No mitigation would be required.

Consistency with AICUZ land use compatibility guidelines: safety. APZ designations would be modified as a result of implementing the proposed action at NAF El Centro (Figure 4-4). Agricultural and recreational land uses surrounding NAF El Centro and would remain compatible land uses within the modified, off-base APZ boundaries. All existing, on-base facilities and proposed F/A-18E/F support facilities would be outside the modified APZs. There would be no impact, and no mitigation would be required.

Consistency with AICUZ land use compatibility guidelines: noise. A less than significant impact would occur at NAF El Centro from locating aircraft operations, training and maintenance facilities in an 85-dB CNEL noise environment. The aircraft operations and maintenance facilities are identified as normally compatible or clearly compatible. Training activities in this noise environment would be a normally incompatible use. The Navy will incorporate acoustical reduction measures into facility design or modification to comply with the adopted AICUZ noise standards. No further mitigation would be required. Impacts to the noise environment from the proposed action are discussed in Section 4.7, Noise.

Compatibility with regional land uses. Implementing the proposed action at NAF El Centro would not significantly affect regional land uses. Airfield operations at NAF El Centro are protected from encroachment by Imperial County General Plan policies that encourage agricultural production and limit building heights near the base. No mitigation would be required.

Operations based out of NAF El Centro would increase from current levels since no squadrons are deployed there at present. Table 2-8 indicates that basing the F/A-18E/F aircraft at NAF El Centro would result in 4,797 additional sorties to the R-2508 Complex. The increase would not be expected to significantly impact R-2508 since scheduling adjustments would permit accommodation of aircraft within the airspace. The increase in flights from NAF El Centro to the R-2508



El Centro and Imperial are outside NAF El Centro's APZ and imaginary surfaces.

LEGEND:

- Clear Zone and Setback
- Accident Potential Zone I
- Accident Potential Zone II
- NAF El Centro Boundary

NAF El Centro
Proposed Action Accident Potential Zones

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: Wyle 1997

Figure 4-4

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Complex would not impact any national parks or wilderness areas since there are none below the route. Impacts to the noise from the proposed action are discussed in Section 4.7, Noise, and detailed analysis is provided in Appendix F.

Impacts to MTRs from the proposed action at NAF El Centro would be the same as those discussed for NAS Lemoore. Use of each MTR would increase by approximately one sortie per week. This increase would not significantly impact airspace use of any MTR. Sensitive land uses beneath VR-1257, such as Joshua Tree National Park or Anza-Borrego Desert State Park, would not be measurably impacted by noise associated with this increased use. Impacts to the noise environment in VR-1257 are discussed in Section 4.7, Noise, and detailed analysis is provided in Appendix F.

Impacts to airspace operations. The increase in numbers of flights at NAF El Centro from the proposed action would not significantly affect flight operations. Although airfield use and flight operations in the airspace above NAF El Centro would substantially increase over existing operations, it is anticipated that aircraft would be scheduled within established operational procedures and flight patterns. No changes in airfield operations or airspace designations would be necessary to operate and train the F/A-18E/F aircraft squadrons. No mitigation would be required.

4.2 VISUAL RESOURCES

This section identifies potential impacts to visual resources from implementing the proposed action at NAS Lemoore and NAF El Centro. The impact analysis compares projected conditions after project implementation to the affected environments and affected area.

Significance Criteria

An alternative would have a significant impact on the visual environment if its implementation would result in the following:

- Substantially contrast with the character and scale of the existing community;
- Degrade views from any formally recognized scenic viewshed or roadway; or
- Dominate views of a visually unique structure or landform.

Table 4-3 summarizes the potential impacts to visual resources that have been identified in this analysis.

Table 4-3
Summary of Visual Resources Impacts

Impact Issues	NAS Lemoore	NAF El Centro
Visual character	◐	◐
Views	◐	◐
Consistency with applicable plans and regulations	◐	◐

LEGEND:
● = Significant and not mitigable impact
◑ = Significant but mitigable impact
◐ = Less than significant impact
○ = No impact

4.2.1 NAS Lemoore Alternative

Less than Significant Impacts

Visual character. Development and operations at NAS Lemoore required to support the proposed action would have a less than significant impact on visual character at or near the base. Development of the NAMTRA and other training, maintenance, supply, personnel support, and housing facilities would require construction at NAS Lemoore. Many of these structures would be infill projects that are consistent with existing structures in terms of scale and architectural treatments and based on the BEAP guidelines. The new operational buildings are proposed among structures that are similar in scale and character. The proposed personnel support facilities also would be constructed among administration buildings with similar architecture and scale (i.e., recreation and housing areas).

No unique landforms or scenic attributes would be affected by this alternative. Because the new structures would integrate architectural treatments required by the BEAP, the proposed development would have a less than significant impact on visual character.

NAS Lemoore is home to F/A-18C/D fixed-wing aircraft squadrons. Operationally, the proposed action would result in 92 new aircraft stationed at the base. The increase in flight activity would not substantially change the perceived character of existing operations because there are no visually sensitive land uses beneath the airfield flight path. Therefore, operations associated with the NAS Lemoore Alternative would have a less than significant impact on the visual environment. No mitigation would be required.

Views. Implementing the proposed action at NAS Lemoore would result in a less than significant impact to nearby views. The interior location of the proposed structures would restrict their visibility to internal base operations. None of the structures would be visible from outside the base perimeter. Therefore, there would be no visual impacts to off-base public views. This impact is considered less than significant because the new development would be visible from on-base residential areas. No mitigation would be required.

Consistency with applicable plans and regulations. Implementing the proposed action at NAS Lemoore would be consistent with relevant plans and regulations. All construction would comply with NAS Lemoore BEAP design guidelines. No mitigation would be required.

4.2.2 NAF El Centro Alternative

Less than Significant Impacts

Visual character. Development and operations at NAF El Centro required to support the proposed action would have a less than significant impact on visual character at or near the base. Developing a new runway and operational, training, maintenance, supply, personnel support, and housing facilities would require constructing and expanding some existing facilities at NAF El Centro. The proposed new family housing, general warehouse, general storage shed, ground support equipment holding shed, flight simulator, strike fighter weapons school, NAMTRA, aviation life support system shop, and expanded open storage area would be within 1,000 feet (305 meters) of the main gate. These buildings would be larger than other nearby facilities but similar in scale to other on-base hangars. The visually detectable change from agricultural land to operational area would contrast with the surrounding agricultural character of the site but would remain consistent with hangar and other military airfield facilities. The personnel support facilities would be constructed among structures similar in scale and character as the proposed buildings (i.e., recreation and housing areas). No unique landforms or scenic attributes would be removed with the NAF El Centro Alternative. Landscaping and architectural treatments required in the BEAP would serve to

integrate the proposed structures into the visual theme established at the base. Therefore, the impact to visual character associated with the NAF El Centro Alternative would be less than significant.

Currently, 89 percent of flight activity at NAF El Centro is from five fixed-wing aircraft. Siting the 164 F/A-18E/F aircraft at NAF El Centro would noticeably change the visual character of flight activity at the base because of the increased number of aircraft. However, visually sensitive land uses are limited within the base's airfield flight path; that is, there are no sensitive viewsheds outside the base perimeter. Therefore, the impact of operations associated with the NAF El Centro Alternative to the visual environment would be less than significant. No mitigation would be required.

Views. Implementing the proposed action at NAF El Centro would have a less than significant impact on nearby views. Although the new operational and housing structures would be visible from the perimeter of the base and main gate, there are no sensitive viewsheds outside the base perimeter. None of the personnel support structures would be visible from outside the base perimeter or main gate because distance and intervening structures block views to internal areas. Overall, views of each project site within NAF El Centro have low visual quality because there is minimal variation in scenery, topography, and architecture. Therefore, impacts to existing views associated with the NAF El Centro Alternative would be less than significant. No mitigation would be required.

Consistency with applicable plans and regulations. The NAF El Centro Alternative is consistent with relevant plans and regulations. All construction would comply with the NAF El Centro BEAP design guidelines. No mitigation would be required.

4.3 SOCIOECONOMICS

This section describes potential consequences to socioeconomic indicators that may result from implementing the proposed action at NAS Lemoore or NAF El Centro. The socioeconomic indicators for this study include population, employment, income, housing, business volume, net government revenues, schools, and recreation and community facilities. The impact analysis compares projected conditions after basing the F/A-18E/F squadrons to the affected environments and areas of influence described in Section 3.4, Socioeconomics.

Significance Criteria

Implementing the proposed action would have a significant socioeconomic effect if it would result in the following:

- Fall outside the Economic Information Forecast System (EIFS) model rational threshold values (RTV) boundaries for population, employment, personal income, or business volume;
- Substantially affect the local housing market and vacancy rates, school enrollment, or recreation and community facilities; or
- Substantially decrease net government revenues.

The economic Impact Forecast System (EIFS) is a computerized economic base model, which includes an RTV standard that determines whether the expected change generated by a proposed action is significant. The RTV is calculated on the basis of yearly historical fluctuations in population, employment, income, and business volume within the appropriate county or counties. For a change to be significant, it must exceed the computed positive or negative RTV. Appendix B contains complete RTV tables and EIFS model results for the proposed action areas of influence.

Two types of models were used within the EIFS modeling system to take into consideration the effects of operations and construction. The operations effects (the change in F/A-18E/F aircraft personnel and procurement) are described by the standard model, and the construction phase effects are described by the construction model. In both cases, any change entered into the model affecting a sector of the economy causes a change in payrolls and employment of local firms. Further, the change in payrolls and employment for the export sector is transmitted to the local service sector as a multiple of the original change. In addition to this multiplier effect, EIFS converts the direct and indirect effects of business volume, employment, and income into other economic and social impacts by a series of county-specific equations.

Table 4-4 summarizes the potential socioeconomic impacts that have been identified in this analysis. In the following analysis of impacts, the year with the most change is discussed, which in most cases is 2004 for NAS Lemoore and 2007

Table 4-4
Summary of Socioeconomic Impacts

IMPACT ISSUES	Alternatives: NAS Lemoore	Alternatives: NAF El Centro
Population	◐	◐
Employment	◐	◐
Income	◐	◐
Housing	◐	◐
Business volume	◐	◐
Net government revenues	◐	◐
Schools	◑	◐
Recreation and community facilities	◐	◐

LEGEND:
● = Significant and not mitigable impact
◑ = Significant but mitigable impact
◐ = Less than significant impact
○ = No impact

for NAF El Centro. However, high construction costs would be experienced in some years because of construction phasing, causing higher changes in some indicators. Business volume is its highest in 2001 for the NAS Lemoore area of influence; in the NAF El Centro area of influence business volume is at its highest in 2000.

Analysis Approach

Some assumptions were made with respect to operations and construction activities. The proposed action would require locating 1,856 military personnel to NAS Lemoore and 3,443 military personnel to NAF El Centro.

Deploying personnel has not been considered in this study because most economic activity would remain at the selected base and income would be sent back to the selected base. It is anticipated that civilian personnel would be hired at each base. For this study, the additional support personnel are assumed to be clerical or semi-skilled and easily hired from the local area.

The construction phase would involve the construction and expansion or renovation and rehabilitation of facilities. The amount of construction activity depends on which base is chosen for the project; therefore, the dollar costs of construction vary from base to base (Table 4-5). The construction phase would begin in 1999 and end in 2001 or 2003, depending on the base. No major construction activities are anticipated in 2004 or beyond. It is expected that local procurement for the F/A-18E/F aircraft, related facilities, and personnel would be $107,500 per year.

Table 4-5
Estimated Annual Construction Costs

Year	NAS Lemoore	NAF El Centro
1999	$20,540,000	$86,358,560
2000	$37,810,000	$289,134,000
2001	$51,000,000	$82,615,000
2002	$28,150,000	NA*
2003	$24,802,000	NA*
Total	$162,302,000	$458,107,560

*NA = Not applicable. Only NAS Lemoore would have construction activities in 2002 and 2003.

4.3.1 NAS Lemoore Alternative

Implementing the proposed action at NAS Lemoore would require construction, modification of existing facilities, and new equipment to support the F/A-18E/F squadrons and associated personnel. The total construction costs would be approximately $162.3 million. Table 4-6 describes the predicted personnel buildup.

Table 4-6
Projected Personnel Buildup at NAS Lemoore

	1999	2000	2001	2002	2003	2004
Military	167	594	780	1,058	1,336	1,856
Civilian	120	120	120	120	120	120

Source: US Navy 1997b.

Significant Impacts

Impact 1: Schools. A significant but mitigable impact to schools may occur due to the action at NAS Lemoore but could be mitigated by federal impact aid payments to eligible school districts. Area schools are either near or over capacity. It is estimated that implementing the proposed action at NAS Lemoore would add between 783 and 1,284 students to area schools in 2004, based on EIFS model estimates and Navy estimates.

Mitigation 1. School districts may be eligible for compensation for the addition of federally connected students. Impact aid is intended to compensate local school districts for burdens placed on their resources by federal activity. Schools must apply for impact aid through a competitive process, and funds are paid directly by the Department of Education (US Department of Education 1995). The Navy would assist, to the extent practicable, affected schools in their pursuit for federal impact aid. Implementing this mitigation may reduce this impact to a less than significant level; however mitigation may be inadequate because of funding shortfalls in recent years.

Less than Significant Impacts

Population. The increase in population at NAS Lemoore from implementing the proposed action would be a less than significant impact. The aggregate population of Kings and Fresno counties would increase by 4,621 in 2004 (Table 4-7). This population increase would be less than 1 percent more than the baseline population. This change would be within the historic RTV range and would not be considered significant. No mitigation would be required.

Table 4-7
Socioeconomic Effects at NAS Lemoore

	Population	Employment	Income ($1,000)	Housing Rental	Housing Owner-Occupied	Business Volume ($1,000)	Net Government Revenues ($1,000)	Number of School Children
1999								
Operations	416	389	$11,700	63	35	$13,208	$501	70
Construction	92	346	$8,419	41	0	$27,652	$34	16
Total	508	735	$20,119	104	35	$40,860	$535	86
2000								
Operations	873	933	$29,617	224	126	$28,290	$1,631	250
Construction	170	636	$15,498	75	0	$50,901	$62	30
Total	1,043	1,569	$45,115	299	126	$79,191	$1,693	280
2001								
Operations	1,942	1,170	$37,442	295	166	$34,860	$2,123	329
Construction	229	858	$20,905	101	0	$68,658	$84	41
Total	2,171	2,028	$58,347	396	166	$103,518	$2,207	370
2002								
Operations	2,634	1,353	$44,511	400	225	$37,763	$2,798	446
Construction	126	474	$11,539	56	0	$37,896	$47	22
Total	2,760	1,827	$56,050	456	225	$75,659	$2,845	468
2003								
Operations	3,327	1,879	$60,752	504	284	$54,498	$3,593	564
Construction	111	417	$10,166	49	0	$33,389	$41	20
Total	3,438	2,296	$70,918	553	284	$87,887	$3,634	584
2004								
Operations	4,621	2,541	$82,571	701	394	$72,864	$4,968	783
Construction*	0	0	$0	0	0	$0	$0	0
Total	4,621	2,541	$82,571	701	394	$72,864	$4,968	783

Source: EIFS Model.

*The designated activity is not anticipated to occur in this year.

Employment. Implementing the proposed action at NAS Lemoore would result in a beneficial impact on employment. The largest increase in direct and indirect employment (almost 1 percent above the baseline) would be 2,541 workers associated with construction and operations activities in 2004. This change would be within the historic RTV range and would not be considered significant. No mitigation would be required.

Income. Implementing the proposed action at NAS Lemoore would result in a beneficial impact to income. In 2004, aggregate income would increase by $82,571,000, the largest increase during the first 6 years of activities. This change would be within the historic RTV range and would not be considered significant. No mitigation would be required.

Housing. Implementing the proposed action at NAS Lemoore would result in a less than significant impact on housing. In the year with the most activity (2004), 701 rental units and 394 owner-occupied units would be needed for operations and construction personnel and their family members. In 1994, 13,780 units were vacant, and the project area had a vacancy rate of 5.1 percent. The vacancy rate is projected to be similar in 2004. Base family housing units would be constructed in 2000 and 2001 for an additional 4399 units, and bachelor quarters would be expanded. The housing units required could be provided with this alternative. This demand would not be considered significant given the availability of housing in the project area. No mitigation would be required.

Business volume. Implementing the proposed action at NAS Lemoore would result in a beneficial impact to business volume. Changes in local business activity resulting from siting the F/A-18E/F aircraft and personnel include direct business volume and induced business volume. Direct business volume is the change in the dollar value of sales in the retail and wholesale trade sector and receipts in the service sector, resulting from local purchases by civilian and military personnel, as well as construction and procurement expenditures. Induced business volume is the additional business activity generated as a result of the direct change in sales. Business volume for the project area would increase by $103,518,000 in 2001, the year with the greatest change. This reflects an increase of less than 1 percent over the baseline. This change would be within the historic RTV range and would not be considered significant. No mitigation would be required.

Net government revenues. Implementing the proposed action at NAS Lemoore would result in a beneficial impact to net government revenues. Government revenues would increase by $4,995,000 in 2003, which would be less than 1 percent of the total revenue sources of Kings and Fresno counties. This change would not be considered significant, and no mitigation would be required.

Recreational and community facilities. The current recreational and community facilities at NAS Lemoore are not adequate to support the additional military personnel (Mitchell 1997). However, a gymnasium addition is planned to supplement existing facilities that would make the level of service adequate for the needs of the military personnel. Outdoor recreation facilities on- and off-base would be adequate. No significant impacts would be expected, and no mitigation would be required.

4.3.2 NAF El Centro Alternative

Implementing the proposed action at NAF El Centro would require constructing facilities to support the F/A-18E/F squadrons and associated personnel. Constructing facilities would cost approximately $458.1 million. Table 4-8 lists the projected personnel buildup.

Table 4-8
Projected Personnel Buildup at NAF El Centro

	1999	2000	2001	2002	2003	2004	2005	2006	2007
Military	153	802	970	1,244	1,518	2,525	2,984	2,984	3,443
Civilian	200	200	200	200	200	200	200	200	200

Source: US Navy 1997b.

Less than Significant Impacts

Population. Implementing the proposed action at NAF El Centro would result in a substantial increase in population. The direct and indirect population increase ascribed to the F/A-18E/F aircraft activities would be the largest in 2007 at 8,573 (Table 4-9), which would be 8.3 percent above the baseline population. This change would not be within the historic RTV ranges (6.828 to -1.543). In 2005 and 2006, population changes also would be above the historic RTV for population. However, these population changes would be accompanied by beneficial impacts to the community, such as increases in employment, income, business volume, and net government revenues. No mitigation would be required.

Employment. Implementing the proposed action at NAF El Centro would result in a beneficial impact on employment. Employment increases in the project area would be 4,293 in 2007, or almost 10 percent above the baseline. This change would be within the historic RTV range and would not be considered significant. No mitigation would be required.

Income. Implementing the proposed action at NAF El Centro would result in a beneficial significant impact to income. At $145,165,000, income would increase more than 9 percent over the baseline income in 2007. This change would not be within the historic RTV range (8.138 to -3.499) and would be considered significant. No mitigation would be required, however, because of the beneficial nature of the impact.

Housing. Implementing the proposed action at NAF El Centro would result in a less than significant impact on housing. The siting of F/A-18E/F aircraft at NAF El Centro would create a demand for 1,300 rental and 731 owner-occupied units in the year of greatest activity (2007). In 1994, almost 4,000 units were available in Imperial County, and availability is projected to be similar in 2007. In 2000, 775 on-base family housing units would be constructed. In addition, bachelor quarters would be built to accommodate F/A-18E/F personnel. The demand would not be considered substantial when compared to the available housing units, and no mitigation would be required.

Business volume. Implementing the proposed action at NAF El Centro would result in a significant impact to business volume in 2000. Realignment activities

Table 4-9
Socioeconomic Effects at NAF El Centro

	Population	Employment	Income ($1,000)	Housing Rental	Housing Owner-Occupied	Business Volume ($1,000)	Net Government Revenues ($1,000)	School Children
1999								
Operations	381	438	$13,276	58	32	$11,338	$1,893	65
Construction	263	753	$18,859	116	0	$50,074	$1,956	48
Total	**644**	**1,191**	**$32,135**	**174**	**32**	**$61,412**	**3,849**	**113**
2000								
Operations	1,997	1,198	$39,293	303	170	$26,272	$6,369	345
Construction	881	2,520	$63,140	389	0	$167,652	$6,550	161
Total	**2,878**	**3,718**	**$102,433**	**692**	**170**	**$193,924**	**12,919**	**506**
2001								
Operations	2,415	1,395	$46,028	366	206	$30,138	$7,528	418
Construction	252	720	$18,041	111	0	$47,904	$1,872	46
Total	**2,667**	**2,115**	**$64,069**	**477**	**206**	**$78,042**	**9,400**	**464**
2002								
Operations	3,098	1,716	$57,012	470	264	$36,443	$9,418	536
Construction*	0	0	$0	0	0	$0	$0	0
Total	**3,098**	**1,716**	**$57,012**	**470**	**264**	**$36,443**	**9,418**	**536**
2003								
Operations	3,780	2,037	$67,996	573	322	$42,749	$11,308	654
Construction*	0	0	$0	0	0	$0	$0	0
Total	**3,780**	**2,037**	**$67,996**	**573**	**322**	**$42,749**	**11,308**	**654**
2004								
Operations	6,287	3,217	$108,365	953	536	$65,921	$18,254	1,088
Construction*	0	0	$0	0	0	$0	$0	0
Total	**6,287**	**3,217**	**$108,365**	**953**	**536**	**$65,921**	**18,254**	**1,088**
2005								
Operations	7,430	3,755	$126,765	1,127	634	$76,484	$21,420	1,286
Construction*	0	0	$0	0	0	$0	$0	0
Total	**7,430**	**3,755**	**$126,765**	**1,127**	**634**	**$76,484**	**$21,420**	**1,286**
2006								
Operations	7,430	3,755	$126,765	1,127	634	$76,484	$21,420	1,286
Construction*	0	0	$0	0	0	$0	$0	0
Total	**7,430**	**3,755**	**$126,765**	**1,127**	**634**	**$76,484**	**$21,420**	**1,286**
2007								
Operations	8,573	4,293	$145,165	1,300	731	$87,046	$24,586	1,484
Construction*	0	0	$0	0	0	$0	$0	0
Total	**8,573**	**4,293**	**$145,165**	**1,300**	**731**	**$87,046**	**$24,586**	**1,484**

Source: EIFS Model.

*The designated activity is not anticipated to occur in this year.

would directly and indirectly create an additional $193,924,000 in business volume, or over 12 percent above the baseline. This change would not be within the historic RTV range (8.275 to -6.266) and would be considered a significant beneficial impact. No mitigation would be required.

Net government revenues. Implementing the proposed action at NAF El Centro would result in a significant impact to net government revenues. Revenues are projected to increase by $24,586,000 in 2007. The increase in government revenue sources would be over 10 percent in 2000 (because of the anticipated construction

activity), 2004, 2005, and 2006. This would result in an almost 20 percent increase in revenue sources over the baseline. This change would be considered a significant beneficial impact, and no mitigation would be required.

Schools. The affected schools near NAF El Centro are below capacity. With this alternative, it is projected that between 1,484 and 2,393 school children would be added to local schools in 2007, based on EIFS model projections and Navy estimates. The local schools have the capacity to accommodate the increase in students (Preciado 1998). School districts also may be eligible for impact aid (similar to the mitigation described for the NAS Lemoore alternative) because the additional students would be federally connected children. No mitigation would be required.

Recreation and community facilities. NAF El Centro has just renovated the existing on-base recreation facilities to meet its existing needs; however, additional personnel and family members would exceed the facilities' capacities. This alternative proposes constructing a gymnasium addition to accommodate the new personnel. Outdoor recreation facilities on and off base would be adequate. No significant impacts would be expected, and no mitigation would be required.

4.4 CULTURAL RESOURCES

This section identifies potential impacts to cultural resources that may result from implementing the proposed action at NAS Lemoore or NAF El Centro. Impact assessments focus mainly on those properties likely to be eligible for the National Register of Historic Places (NRHP). In addition to identifying the number and kinds of resources to be affected, the following issues were considered:

- The relative importance of a resources type in the regional context;
- The depositional or architectural integrity of a given resource; and
- The relative degree of protection afforded similar off-base resources in the region.

Section 106 of the National Historic Preservation Act (NHPA) requires identifying, evaluating, and assessing the effects of planned federal undertakings on cultural resources in consultation with the SHPO. The regulations implementing Section 106 state that an undertaking has an effect on a historic property (i.e., NRHP-eligible resource) when that undertaking may alter those characteristics of the property that make it eligible for inclusion in the NRHP. An undertaking is considered to have an adverse effect on a historic property when it may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects include, but are not limited to the following:

- Physical destruction, damage, or alteration of all or part of the property;
- Isolation of the property or alteration of the character of the property's setting when that character contributes to its qualifications for inclusion on the NRHP;
- Introduction of visual, audible, or atmospheric elements that are out of character with the property or changes that may alter its setting;
- Neglect of a property resulting in its deterioration or destruction; and
- Transfer, lease, or sale of a property without adequate provisions to protect its historic integrity.

Other types of disturbances may occur that would be of concern to Native American groups, such as inadvertently discovering Native American remains and objects. Specific types of Native American resources and provisions for notification and consultation are identified under the Native American Graves Protection and Repatriation Act (NAGPRA).

Impacts to cultural resources consist of ground-disturbing activities, modification and alteration to historic structures, visual intrusion on a historic setting, and unauthorized artifact collecting. Direct impacts are those that would occur during

project construction, development, and operation that would directly impinge on or destroy cultural resources, such as all activities that entail earthmoving. Impacts can occur directly to a site by loss of all or part of the site through grading, filling, or other construction. Ground-disturbing activities may affect the physical integrity of cultural resources, destroying their research potential and, subsequently, their eligibility for the NRHP or their importance to Native American groups.

Modifying or altering historic buildings may disturb the architectural integrity that contributes to their NRHP eligibility. Increased pedestrian activity provides opportunities for unauthorized artifact collection and vandalism of cultural resources; these activities affect the integrity of sites and subsequent eligibility.

Impacts can occur indirectly by altering the character of the site setting and by introducing visual, audible, or atmospheric elements that change the character of the site or its setting. If setting is a critical factor in the eligibility of an NRHP district, constructing incompatible architectural styles would disturb the setting and cohesiveness of the district.

Although the construction phase of the proposed project is of a relatively short duration, adverse effects to NRHP-eligible cultural resources might be long-term and permanent. Project-related activities may have an indirect impact, specifically unauthorized artifact collecting and vandalism, on all cultural resources in the area of potential effect (APE).

Significance Criteria

Impact assessments for prehistoric and historic resources are based on the type of site, NRHP eligibility status, the type of impact, and the extent of disturbance from the project. Impacts to prehistoric and historic resources are considered significant if the project could adversely affect those sites eligible for or potentially eligible for the NRHP.

Impact assessments for traditional cultural properties are based on the type of resource, its importance in the community's belief system, the type of impact, and the extent of disturbance from the project. Impacts to traditional cultural properties are considered significant if the project could affect locations important to Native Americans or other communities, if it could reduce access to sacred or sensitive sites, or if it could affect NRHP-eligible resources of historic value to a specific community.

Table 4-10 summarizes the potential impacts to cultural resources that have been identified in this analysis.

Table 4-10
Summary of Cultural Resources Impacts

Impact Issues	NAS Lemoore	NAF El Centro
Prehistoric archeological resources	○	○
Traditional cultural properties	○	○
Historic archeological resources	○	○
Historic architectural resources	○	○
Prehistoric subsurface deposits	○	◐
Historic subsurface deposits	○	◐

LEGEND:
● = Significant and not mitigable impact
◑ = Significant but mitigable impact
◐ = Less than significant impact
○ = No impact

4.4.1 NAS Lemoore Alternative

Less than Significant Impacts

Prehistoric and historic archeological resources. No impacts to archeological resources would result from implementing the proposed action at NAS Lemoore. Because no prehistoric or historic archeological sites have been identified within the APE and because the APE falls within a low-sensitivity zone where prehistoric and historic archeological sites are not expected to exist, there would be no impact to these types of resources as a result of this alternative. No mitigation would be required.

Traditional cultural properties. No impacts to traditional cultural properties would occur from implementing the proposed action at NAS Lemoore. Because no traditional cultural properties have been identified within the APE on NAS Lemoore, there would be no impact to these types of resources as a result of this alternative. No mitigation would be required.

Historic architectural resources. No impacts to historic architectural resources would occur from implementing the proposed action at NAS Lemoore. Because none of the buildings scheduled for modification are considered eligible for the NRHP, there would be no impact to these types of resources as a result of the proposed action. Although the Neutra School is considered potentially eligible for the NRHP, there would be no impact to the school as a result of this alternative. No mitigation would be required.

Prehistoric subsurface deposits. No impacts to prehistoric subsurface deposits would result from implementing the proposed action at NAS Lemoore. Because prehistoric subsurface deposits are only likely to exist at depths below 6 feet (2 meters), and because ground disturbing activities associated with implementing the proposed action are not anticipated to occur at these depths, there will be no impacts to these types of resources at NAS Lemoore. However, if subsurface

deposits are encountered during construction activities, all work should stop and the procedures specified in the historic archeological resources protection plan (Milliken and Mikesell 1997) should be followed.

Historic subsurface deposits. No impacts to historic subsurface deposits would result from implementing the proposed action at NAS Lemoore. Because the potential for historic subsurface deposits is low, no impacts to these types of resources are anticipated as a result of implementing the proposed action at NAS Lemoore. However, if subsurface deposits are encountered during construction activities, all work should stop and the procedures specified in the historic archeological resources protection plan (Milliken and Mikesell 1997) should be followed.

4.4.2 NAF El Centro Alternative

Less than Significant Impacts

Prehistoric resources. No impacts to prehistoric resources would result from implementing the proposed action at NAF El Centro. Because only one prehistoric site has been identified on NAF El Centro and because this site is not considered eligible for the NRHP, there would be no impacts to these types of resources as a result of this alternative. No mitigation would be required.

Traditional cultural properties. No impacts to traditional cultural properties would result from implementing the proposed action at NAF El Centro. Because no traditional cultural properties or other Native American resources have been identified at NAF El Centro, there would be no impact to these types of resources as a result of this alternative. No mitigation would be required.

Historic archeological and architectural resources. No impacts to historic archeological and architectural resources would result from implementing the proposed action at NAF El Centro. Because no NRHP-eligible historic archeological sites have been identified on NAF El Centro, there would be no impact to these types of resources as a result of this alternative. Because none of the structures scheduled for modification are considered eligible for the NRHP, there would be no impact to these types of resources as a result of this alternative. No mitigation would be required.

Historic subsurface deposits. Less than significant impacts to subsurface deposits would result from implementing the proposed action at NAF El Centro. Because the potential for subsurface deposits to occur within the APE is considered low, impacts to these resources are unlikely and no mitigation would be required. However, if NRHP-eligible subsurface deposits are encountered during construction activities, impacts to them would be considered significant and mitigable. If prehistoric or historic subsurface deposits are encountered, all work should stop pending documentation and evaluation of the resource by a qualified archeologist.

4.5 TRAFFIC AND CIRCULATION

This section identifies potential impacts to traffic and circulation that may result from implementing the proposed action at each of the alternative bases. The traffic and circulation analysis is an evaluation of the nature and extent of change to the projected 1999 traffic conditions as indicated by the levels of service for intersections and roadways within the affected area for each alternative base. Specific impacts and mitigation measures are identified.

Significance Criteria

For the purposes of this analysis, significance criteria were developed from local standards. For NAS Lemoore, Caltrans District 6 has significance criteria in its April 1993 publication *A Guide For Traffic Impact Studies,* which states that Level of Service (LOS) C is the minimum acceptable level of service, except where the existing traffic condition is LOS D or worse. Where existing traffic conditions are LOS D or worse, the existing LOS and volume-to-capacity (V/C) ratio should be maintained through mitigation. Imperial County does not have an existing standard for traffic operations. Since NAS Lemoore and NAF El Centro are both in semi-rural areas, the Caltrans standard has been applied to both installations as described below:

- If LOS is A, B, or C before the project traffic is added, then the impact of the added traffic would be significant if the LOS changes to D or worse with the added traffic.
- If LOS is D or worse before the project traffic is added, then the traffic impact of the added traffic would be significant if there is any change in LOS to a worse service level or if any change in V/C occurs with the added traffic.

For street segments, the significance criteria are as follows:

- If LOS is A, B, or C before the project traffic is added, then the impact of the added traffic would be significant if the LOS changes to D or worse with the added traffic.
- If LOS is D or worse before the project traffic is added, then the traffic impact of the added traffic would be significant if there is any change in LOS to a worse service level or if any change in V/C occurs with the added traffic.

Impacts that are identified as significant would require measures to mitigate impacts to acceptable levels (LOS C or better) or to the service level before the project traffic is added.

Table 4-11 summarizes the potential impacts to traffic and circulation that have been identified in this analysis.

Table 4-11
Summary of Traffic Impacts

Impact Issues	NAS Lemoore	NAF El Centro
Signalized intersection LOS	◑	○
Unsignalized intersection LOS	ⓘ	◑
Street segment LOS	ⓘ	ⓘ

LEGEND:
● = Significant and not mitigable impact
◑ = Significant but mitigable impact
ⓘ = Less than significant impact
○ = No impact

Analysis Approach

The general approach to the impact analysis included estimating the trip generation for each alternative, distributing and assigning project trips to the roadway network, and calculating levels of service. Additional details on the assumptions are provided with each alternative. Potential impacts were evaluated for intersections and roadways in the affected area. Since the affected area for the traffic analysis differs for each alternative, the area is described with the discussion of each alternative below. Appendix D provides print-outs of the LOS calculation sheets.

Added traffic would result from the military personnel and family members associated with proposed action located at the receiving installation. The amount of vehicular traffic estimated to be generated at each alternative location was determined based on information concerning the number of additional personnel that would be relocated to each base. The amount of traffic generated by the proposed action depends on the distribution of the F/A-18E/F personnel to on-base and off-base housing.

Since the travel characteristics would differ by location of residence, the trip generation was divided into the following three distinct groups: personnel residing on-base, personnel residing off-base, and spouses residing on-base. Since the off-base personnel would be dispersed throughout the surrounding community, the trips generated by off-base family members are included as part of the background growth. The following assumptions were made to translate the personnel amounts into traffic generation figures:

- All additional single enlisted personnel would reside on-base in the BEQ;
- All additional single officers would reside on-base in the BOQ;
- All married officers and senior enlisted personnel and their families would reside off-base;

- Traffic would increase nominally due to deliveries, visitors, and other periodic activities;
- For the married junior enlisted personnel, half of the families would live on-base and half would live off-base; and
- An adjustment was made for squadron personnel who would be deployed and would not be at the base at any given time.

Different trip generation rates were developed for each group. Table 4-12 summarizes the daily and AM and PM peak-hour trip generation rates. The trip rates reflect a one-way trip with one end of the trip on-base. The trip generation rates reflect vehicle trips traveling off-base that would affect the surrounding roadway network. Trips that remain on-base are not included in the trip generation rates.

Table 4-12
Trip Generation Rates for F/A-18E/F Personnel

	Daily	AM In	AM Out	PM In	PM Out
F/A 18 Personnel					
on-base	0.40	0.02	0.02	0.04	0.04
off-base	2.40	1.00	0.03	0.03	1.00
Spouses/Family members					
on-base	2.00	0.00	0.30	0.30	0.00
Support Personnel					
off-base	2.40	1.00	0.03	0.03	1.00

Source: Dowling Associates 1997.

For the on-base personnel, the trip generation rate assumed that 20 percent would drive off-base during the day, resulting in a rate of 0.40 trip ends per day. Of the daily trips, 10 percent would be during the AM peak hour, and 20 percent would be during the PM peak hour.

For off-base personnel, the trip generation rate assumed that each person would make one trip onto the base and one trip off the base each day and that 20 percent would drive off-base during the day, resulting in a daily rate of 2.4 person trips.

For on-base spouses, the trip rate assumes the spouse of each married person residing on-base would drive off-base once during the day. The AM and PM peak-hour rates assume that 30 percent would leave base during the AM peak hour for jobs or errands off-base, and a similar percentage would return during the PM peak hour.

Given the limited transit services and the existing travel behavior of base personnel, the traffic analysis does not assume a reduction in vehicle trip generation due to transit or ridesharing. Transit is not considered as an alternative transportation means in this analysis. Ridesharing was assumed to be limited,

based on the locations and surrounding traffic conditions of the sites being considered.

4.5.1 NAS Lemoore Alternative

The analysis of traffic impacts at NAS Lemoore included an estimate of vehicle trips generated by the F/A-18E/F personnel and their family members and how those trips are distributed and assigned to the local roadways. The personnel numbers are adjusted to account for the deployment of one F/A-18E/F squadron (275 personnel). Table 4-13 summarizes the vehicle trip generation at NAS Lemoore for the proposed project. The proposed action would add an estimated 2,908 average daily trips to the surrounding roadway network.

Table 4-13
Vehicle Trip Generation for F/A-18E/F Personnel at NAS Lemoore

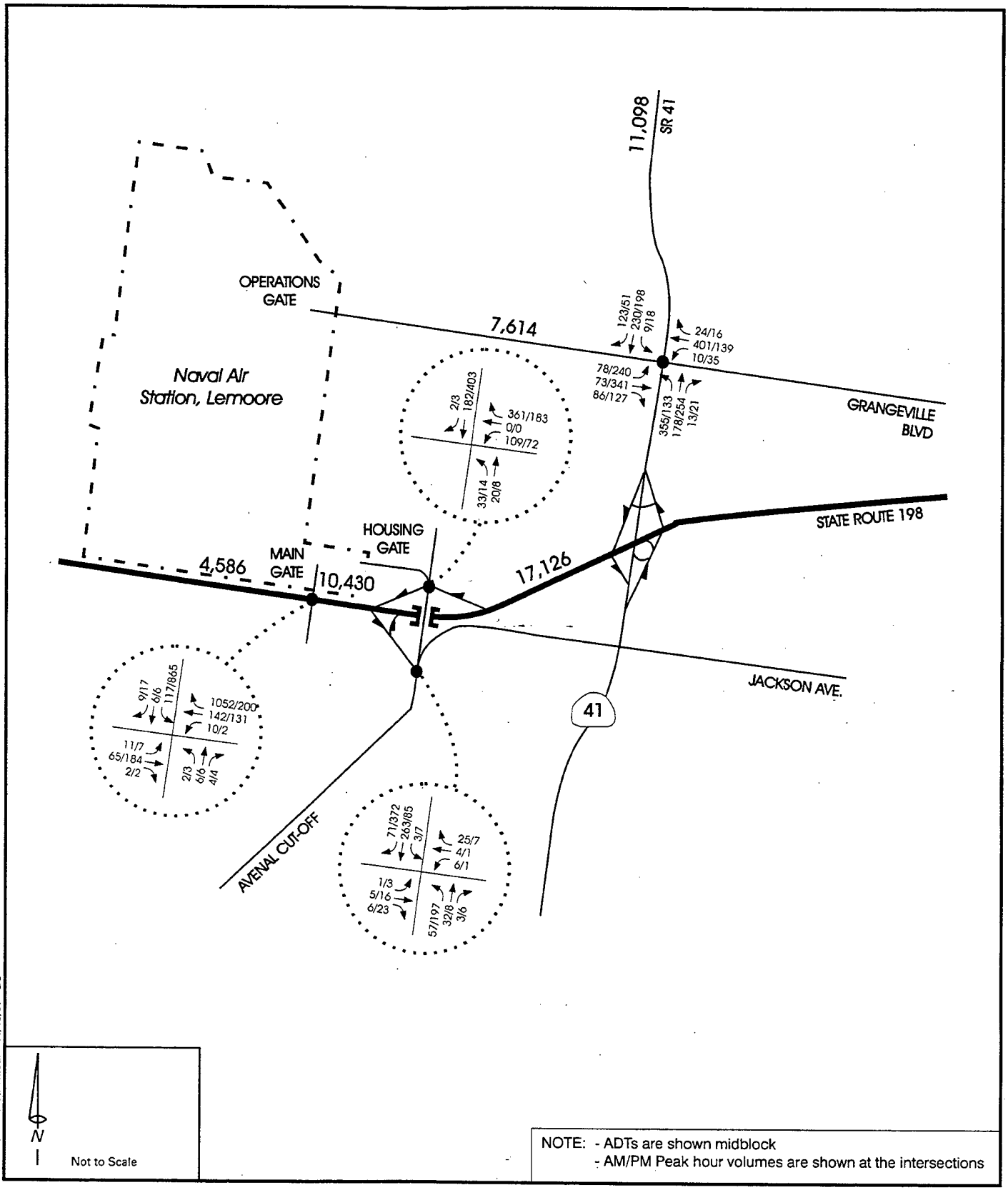
	Daily	AM In	AM Out	PM In	PM Out
1,581 F/A 18 Personnel [1]					
986 on-base	394	20	20	39	39
595 off-base	1,428	595	18	18	595
Spouses/Family members					
399 on-base	798	0	120	120	0
Support Personnel					
120 off-base	288	120	4	4	120
Total	*2,908*	*735*	*162*	*181*	*754*

[1]The F/A-18 personnel numbers assume one of the four squadrons (275 personnel) would be on deployment at any one time.

Source: Dowling Associates 1997.

To assess the traffic impacts at NAS Lemoore, project traffic was distributed to the street system based on existing gate usage, existing traffic counts, the location of local residential developments, and conversations with base planning and engineering staff. Most of project traffic (46 percent) would be expected to use SR-198 (from the east) to access the base, 43 percent would use the operations gate, and the balance of the traffic (11 percent) would use the housing gate. This pattern is expected to continue in the future (O'Donnell 1996). Figure 4-5 shows the future with project traffic volumes.

The impacts of these additional trips to the street and roadway network were determined at four intersections during the AM and PM peak hours and at four roadway segments. Summaries of the LOS analysis are shown in tables 4-14 through 4-16.



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Future traffic volumes do not exceed roadway capacities.

NAS Lemoore: Future with Project Traffic Volumes AM/PM Peak Hours & ADTs

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

LEGEND:

- ● Analysis Intersections
- AM/PM Peak Hour Volumes
- 1,000 Average Daily Trips

Source: Linscott, Law, & Greenspan 1997, Dowling Associates 1997.

Figure 4-5

Table 4-14
Signalized Intersection Operations at NAS Lemoore

Intersection	Peak Hour	Projected 1999 Delay (seconds)	Projected 1999 LOS	Projected 1999 plus Project Delay (seconds)	Projected 1999 plus Project LOS
Grangeville Road/SR-41	AM	13.6	B	16.3	C
	PM	13.0	B	43.6	E
SR-198/main gate	AM	5.0	A	17.1	C
	PM	11.5	B	18.4	C

Delay (seconds)	LOS
0.0 < 5.0	A
5.1 to 15.0	B
15.1 to 25.0	C
25.1 to 40.0	D
40.1 to 60.0	E
> 60.0	F

Source: Dowling Associates 1997.

Table 4-15
Unsignalized Intersection Operations at NAS Lemoore

Intersection	Peak Hour	Movement	Projected 1999 Delay (seconds)	Projected 1999 LOS	Projected 1999 plus Project Delay (seconds)	Projected 1999 plus Project LOS
Avenal Cutoff/EB SR-198 ramps	AM	EB - L/T	5.6	B	5.8	B
		EB – R	3.7	A	3.7	A
		WB - L/T	5.8	B	6.1	B
		WB – R	2.7	A	2.8	A
		NB – L	3.0	A	3.0	A
		SB – L	2.1	A	2.2	A
	PM	EB - L/T	6.0	B	6.1	B
		EB – R	2.9	A	3.0	A
		WB - L/T	5.9	B	6.2	B
		WB – R	2.6	A	2.6	A
		NB – L	2.7	A	2.7	A
		SB – L	2.1	A	2.1	A
Avenal Cutoff/WB SR-198 ramps	AM	WB – L	5.4	B	6.0	B
		WB – R	3.5	A	3.8	A
		NB – L	2.6	A	2.7	A
	PM	WB – L	6.5	B	7.6	B
		WB – R	3.0	A	3.1	A
		NB – L	3.1	A	3.5	A

Source: Dowling Associates 1997.

Table 4-16
Daily Street Segment Operations at NAS Lemoore

Street Segment	Capacity*	Projected 1999 Volume	Projected 1999 V/C	Projected 1999 LOS	Projected 1999 plus Project Volume	Projected 1999 plus Project V/C	Projected 1999 plus Project LOS
SR-198							
West of main gate	14,000	4,560	0.33	B	4,586	0.33	B
East of main gate	31,000	9,110	0.29	A	10,430	0.34	B
Grangeville Boulevard							
West of SR-41	14,000	6,360	0.45	B	7,614	0.54	C
SR-41							
North of Grangeville Boulevard	43,000	10,810	0.25	A	11,098	0.26	A

* Capacities and V/C ratio thresholds based on Caltrans standards

LOS = Level of Service
L = Left-turn
R = Right-turn
T = Through movement
EB = Eastbound
WB = Westbound
NB = Northbound
SB = Southbound

Delay (seconds)	LOS	V/C Ratio	LOS
0.0 < 5.0	A	0.00 - 0.30	A
5.1 to 10.0	B	0.31 - 0.50	B
10.1 to 20.0	C	0.51 - 0.75	C
20.1 to 30.0	D	0.76 - 0.90	D
30.1 to 45.0	E	0.91 - 1.00	E
> 45.0	F	> 1.00	F

Source: Dowling Associates 1997.

Significant Impacts

Impact 1. Signalized intersection LOS (Grangeville Road/SR-41). A significant but mitigable impact would occur at the signalized intersection of Grangeville Road and SR-41 during the PM peak hour, which would change from LOS B to LOS E due to the increase in traffic from the proposed action. Eastbound project traffic coming from the operations gate would be the primary contributor of traffic to the intersection.

Mitigation 1. Increase the signal cycle length during the PM peak hour. With the change in cycle length from 80 to 90 seconds, the intersection of Grangeville Road/SR-41 would operate at LOS C during the PM peak hour. Implementing this mitigation would reduce the impact to a less than significant level. If the NAS Lemoore alternative is selected, the Navy will request that Caltrans consider changing the signal cycle length during the PM peak hour. Implementation of this change would be based on either the analysis performed for the EIS or Caltrans's own evaluation and on discussions between the Navy and Caltrans.

Less than Significant Impacts

Signalized intersection LOS (SR-198/main gate). A less than significant impact would occur at the signalized intersection of SR-198/main gate. This intersection would operate at LOS C or better with and without the project during the AM and PM peak hours.

Unsignalized intersection LOS. A less than significant impact would occur at the unsignalized intersection in the project area. The unsignalized intersections at

Avenal Cutoff/EB SR-198 ramps and Avenal Cutoff/WB SR-198 ramps would continue to operate at LOS B or better during both the AM and PM peak hours (Table 4-15). No mitigation would be required.

Street segment LOS. A less than significant impact would occur at key street segments in the project area. With the addition of project traffic, these streets would continue to operate at LOS C or better on a daily basis (Table 4-16). No mitigation would be required.

4.5.2 NAF El Centro Alternative

The analysis of traffic impacts at NAF El Centro included an estimate of vehicle trips generated by the F/A-18E/F personnel and their family members and how those trips are distributed and assigned to the local roadways. The personnel numbers are adjusted to represent deployment of two of the ten F/A-18E/F squadrons (496 personnel). Table 4-17 summarizes the vehicle trip generation at NAF El Centro for the proposed action. The proposed action would add an estimated 5,339 average daily trips to the surrounding roadway network.

Table 4-17
Vehicle Trip Generation for F/A-18E/F Personnel at NAF El Centro

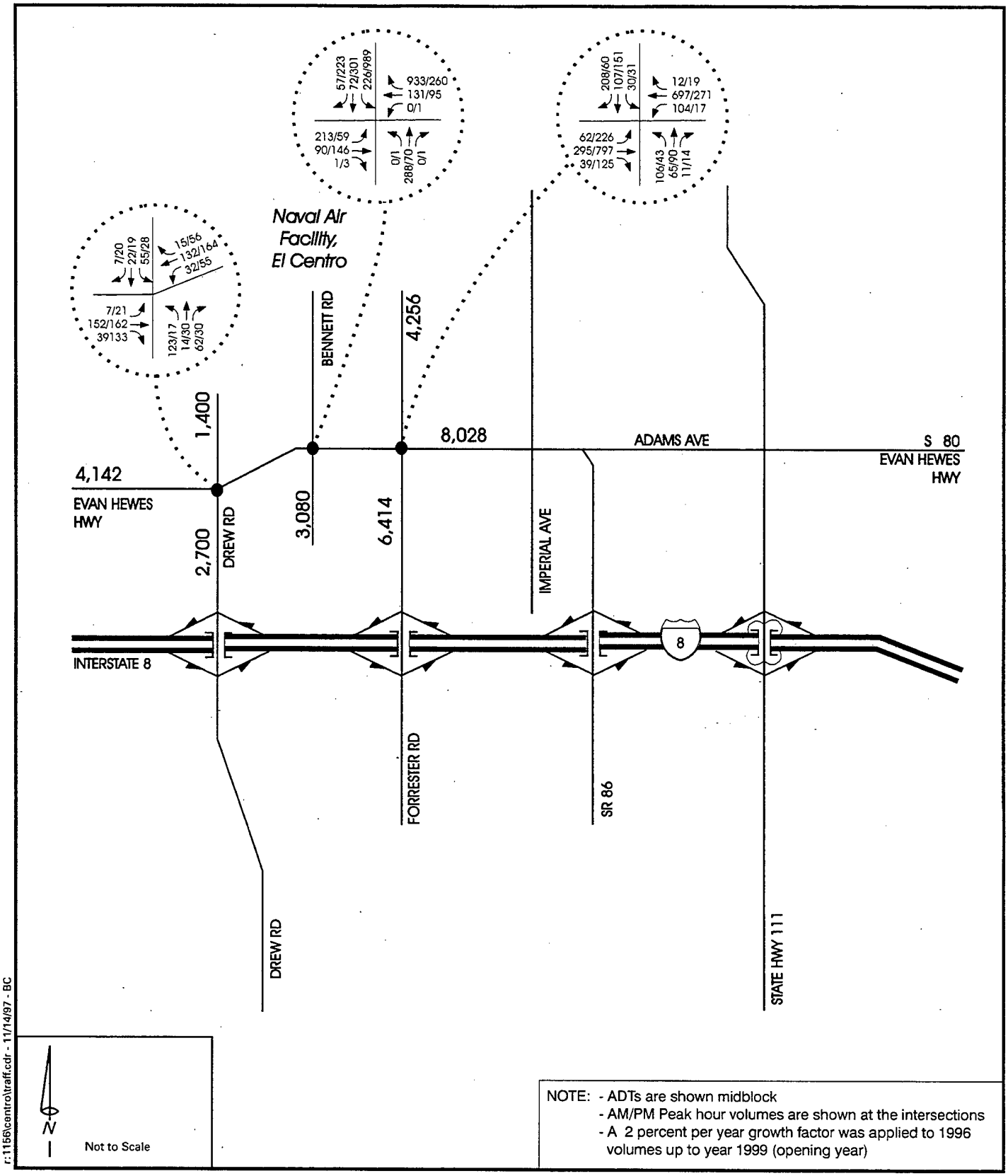
	Daily	AM In	AM Out	PM In	PM Out
2,947 F/A 18 Personnel [1]					
1,882 on-base	753	38	38	75	75
1,065 off-base	2,556	1,065	32	32	1,065
Spouses/Family members					
775 on-base	1,550	0	233	233	0
Support Personnel					
200 off-base	480	200	6	6	200
Total	*5,339*	*1,303*	*309*	*346*	*1,340*

[1]The F/A-18 personnel numbers assume two of the ten squadrons (496 personnel) would be on deployment at any one time.

Source: Dowling Associates 1997.

To assess the traffic impacts, project traffic was distributed to the street system based on the existing intersection traffic counts in the area and the location of area residential developments. Most of the project traffic (45 percent) was assumed to use Evan Hughes Highway from the east to access the naval base. The remaining traffic was distributed to the other local roadways. Figure 4-6 shows the future with project traffic volumes.

The impacts of these additional trips to the street and roadway network were analyzed at three unsignalized intersections and seven roadway segments. There are no key intersections at NAF El Centro that would be impacted by the proposed action. The LOS analysis is summarized in Tables 4-18 and 4-19.



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Future traffic levels do not exceed roadway capacities.

NAF El Centro: Future with Project Traffic Volumes AM/PM Peak Hours & ADTs

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

LEGEND:

- ● Analysis Intersections
- AM/PM Peak Hour Volumes
- 1,000 Average Daily Trips

Source: Linscott, Law, & Greenspan 1997, Dowling Associates, 1997.

Figure 4-6

Table 4-18
Unsignalized Intersection Operations at NAF El Centro

Intersection	Peak Hour	Projected 1999 Delay (seconds)	Projected 1999 LOS	Projected 1999 plus Project Delay (seconds)	Projected 1999 plus Project LOS
Drew Road/Evan Hewes	AM	2.9	A	6.8	B
	PM	3.0	A	3.8	A
Bennett Road/Evan Hewes	AM	2.5	A	Overflow	F
	PM	2.8	A	Overflow	F
Forrester Road/Evan Hewes	AM	4.9	A	Overflow	F
	PM	4.9	A	Overflow	F

Source: Dowling Associates 1997.

Table 4-19
Daily Street Segment Operations at NAF El Centro

Street Segment	Capacity*	Projected 1999 Volume	Projected 1999 V/C	Projected 1999 LOS	Projected 1999 plus Project Volume	Projected 1999 plus Project V/C	Projected 1999 plus Project LOS
Evan Hewes (S-80)							
West of Drew Road	14,000	3,660	0.26	A	4,142	0.30	A
East of Forrester Road	14,000	5,620	0.40	B	8,028	0.57	C
Drew Road							
North of Evan Hewes	14,000	1,240	0.09	A	1,400	0.10	A
South of Evan Hewes	14,000	2,540	0.18	A	2,700	0.19	A
Bennett Road							
South of Evan Hewes	14,000	2,010	0.14	A	3,080	0.22	A
Forrester Road							
North of Evan Hewes	14,000	3,560	0.25	A	4,256	0.30	A
South of Evan Hewes	14,000	6,040	0.43	B	6,414	0.46	B

* Capacities and V/C ratio thresholds based on Caltrans Standards

LOS = Level of Service
L = Left-turn
R = Right-turn
T = Through movement

EB = Eastbound
WB = Westbound
NB = Northbound
SB = Southbound

Delay (seconds)	LOS
0.0 < 5.0	A
5.1 to 10.0	B
10.1 to 20.0	C
20.1 to 30.0	D
30.1 to 45.0	E
> 45.0	F

V/C Ratio	LOS
0.00 - 0.30	A
0.31 - 0.50	B
0.51 - 0.75	C
0.76 - 0.90	D
0.91 - 1.00	E
> 1.00	F

Source: Dowling Associates 1997.

Significant Impacts

Impact 1. Unsignalized intersection LOS (Bennett Road/Evan Hewes Highway). A significant but mitigable impact would occur at the unsignalized intersection of Bennett Road and Evan Hewes Highway, which would change from LOS A to LOS F during the AM and PM peak hours (Table 4-18). Since this intersection is the primary access to the only gate at NAF El Centro, all project-generated trips would pass through it. Impacts at this intersection would result from the westbound right turn movement from Evan Hewes onto the base and the southbound left turn movement onto Evan Hewes from the base. The project traffic at this stop sign-controlled intersection would increase delays to unacceptable levels.

Mitigation 1. Install a signal at the intersection of Bennett Road and Evan Hewes Highway. The improvement would result in LOS B and C at this intersection

during the AM and PM peak hours, respectively. The intersection would meet Caltrans peak-hour signal warrants. Implementing this mitigation would reduce the impact to a less than significant level. If the NAF El Centro alternative is selected, the Navy will request that the Imperial County Public Works Department consider installing a signal at this intersection. Implementing this change would be based on either the analysis performed for the EIS or Imperial County Public Works own evaluation and on discussions between the Navy and Imperial County Public Works.

Impact 2. Unsignalized intersection LOS (Forrester Road/Evan Hewes Highway). A significant but mitigable impact would occur at the unsignalized intersection of Forrester Road and Evan Hewes Highway, which would change from LOS A to LOS F during the AM and PM peak hours (Table 4-19). The change to level of service at this intersection would result from the increase in traffic due to the proposed project. The project traffic at this stop sign-controlled intersection would increase delays to unacceptable levels.

Mitigation 2. Install a signal at the intersection of Forrester Road and Evan Hewes Highway. This would improve intersection operation to LOS C and B during the AM and PM peak hours, respectively. The intersection would meet Caltrans peak-hour signal warrants. Implementing this mitigation would reduce the impact to a less than significant level. If the NAF El Centro alternative is selected, the Navy will request that the Imperial County Public Works Department consider installing a signal at this intersection. Implementing this change would be based on either the analysis performed for the EIS or Imperial County Public Works own evaluation, and discussions between the Navy and Imperial County Public Works. Less than Significant Impacts

Unsignalized intersection LOS. Less than significant traffic impacts would occur at the unsignalized intersection of Drew Road and Evan Hewes Highway. This intersection would operate at LOS B or better during both the AM and PM peak hours (Table 4-18) with the addition of project traffic. No mitigation would be required.

Street segment LOS. A less than significant traffic impact would occur at street segments in the project area. Each key street segment would continue to operate at LOS C or better on a daily basis (Table 4-19) with the addition of project traffic. No mitigation would be required.

4.6 AIR QUALITY

This section identifies potential impacts to air quality that may result from F/A-18E/F facility construction and aircraft operations at NAS Lemoore and NAF El Centro. Impact significance evaluations are based primarily on estimated direct and indirect emissions associated with the proposed action. Carbon monoxide dispersion modeling has been used to evaluate air quality impacts of added traffic on major access roads. Technical analyses supporting the impact significance evaluations are presented in Appendix E.

Significance Criteria

An alternative would have significant air quality impacts if its implementation would directly or indirectly result in the following:

- Produce emissions that would cause or contribute to a violation of state or federal ambient air quality standards;
- Cause an increase in pollutant or pollutant precursor emissions that exceeds relevant emission significance thresholds (such as CAA conformity de minimis levels or the numerical value of major source thresholds for nonattainment pollutants);
- Conflict with specific air quality management plan policies or programs; or
- Foster or accommodate development in excess of levels assumed by the applicable air quality management plan.

The significance criteria for physical air quality impact issues are set largely by the technical procedures used for the impact assessment. Because dispersion modeling analyses have been performed, the most appropriate impact significance criteria for carbon monoxide is the potential for causing or contributing to violations of federal or state carbon monoxide air quality standards. Emission thresholds are used to determine impact significance for pollutants (such as ozone precursors and PM_{10}) that cannot be evaluated with dispersion modeling analyses.

Table 4-20 summarizes the air quality impacts of the alternatives.

Table 4-20
Summary of Air Quality Impacts

Impact Issues	NAS Lemoore	NAF El Centro
Clean Air Act conformity	◑	◑
Increased emissions	◑	◑
Intersection carbon monoxide concentrations	ⓘ	ⓘ

LEGEND:
● = Significant and not mitigable impact
◑ = Significant but mitigable impact
ⓘ = Less than significant impact
○ = No impact

4.6.1 NAS Lemoore Alternative

Significant Impacts

Impact 1: Clean Air Act conformity. Significant but mitigable increases in the emissions of ozone and PM_{10} precursors would occur from implementing the proposed action at NAS Lemoore. Emission sources under Navy control would result in incremental increases in nitrogen oxides, reactive organic compounds and PM_{10} that exceed the relevant de minimis thresholds for the San Joaquin Valley. Consequently, a conformity determination is required and has been included in Appendix E.

Tables 4-21 and 4-22 summarize emissions associated with the NAS Lemoore Alternative. Table 4-21 provides emission estimates for the Phase 1 aircraft arrivals. Table 4-22 provides emission estimates for Phase 2 conditions, when existing F/A-18C/D aircraft will be replaced by F/A-18E/F aircraft and the existing F/A-18C/D FRS squadron will be reduced in size from 36 aircraft to 10 aircraft. The main parts of both Tables 4-21 and 4-22 are organized to present emission estimates for those sources considered in Clean Air Act (CAA) conformity analyses. Table 4-22 shows emission summaries for the initial and ending years of Phase 1 plus two intermediate years (2000 and 2002). Table 4-22 shows emission summaries for the initial and ending years of Phase 2 (2005 and 2010) plus one intermediate year (2006). The conformity determination in Appendix E contains emission summaries for all intermediate years from 1999 through 2010.

The bottom portion of each table shows maximum conformity related emissions plus emissions from additional sources that are excluded for CAA conformity analyses. Emission sources excluded from consideration in CAA conformity analyses still must be considered in the context of NEPA impact assessments.

Aircraft operations would be the largest source of long term emissions associated with the proposed action. Emissions associated with aircraft operations would come from actual flight activity plus in-frame engine run-up tests performed after engine maintenance. Additional emissions would come from the use of aircraft support equipment. Airfield facilities constructed at NAS Lemoore would include fixed point utility systems, thus minimizing the use of portable generators, air compressors, and air start units.

No expansion of aviation fuel handling facilities is anticipated, although annual aviation fuel use would be about 4 million gallons per year. Because JP-5 fuel has a very low volatility, resulting emission quantities would be small.

The middle portion of Table 4-22 summarizes the major components of the conformity analysis for NAS Lemoore. Requirements of the EPA conformity rule are phrased in terms of the year or years with the maximum net increase in

Table 4-21
Annual Emissions from Phase 1 F/A-18E/F Squadron Activity, NAS Lemoore Alternative

Year	Emissions Component	Estimated Annual Emissions, Tons per Year: Reactive Organic Compounds	Nitrogen Oxides	Carbon Monoxide	Sulfur Oxides	PM_{10}
1999	Construction Activity	1.42	20.74	9.71	2.08	14.35
	1999 CAA Conformity Total	1.42	20.74	9.71	2.08	14.35
2000	Construction Activity	0.89	12.83	6.37	1.29	8.20
	F/A-18 E/F Operations	138.24	129.39	591.23	4.20	65.90
	F/A-18 E/F Engine Run-Ups	5.27	5.09	26.90	0.18	2.71
	Aircraft Refueling	0.21	0.00	0.00	0.00	0.00
	Aircraft Support Equipment	4.95	5.49	97.95	0.14	0.34
	On-Base Natural Gas Use	0.00	0.00	0.00	0.00	0.00
	Personal Vehicle Work Trips	4.53	3.24	51.96	0.09	9.23
	Added Government Vehicle Use	0.08	0.08	0.61	0.00	0.23
	2000 CAA Conformity Total	154.16	156.12	775.03	5.90	86.61
2002	Construction Activity	0.78	11.57	5.23	1.17	7.37
	F/A-18 E/F Operations	279.58	254.36	1,195.45	8.30	130.75
	F/A-18 E/F Engine Run-Ups	12.09	11.67	61.72	0.41	6.21
	Aircraft Refueling	0.44	0.00	0.00	0.00	0.00
	Aircraft Support Equipment	10.02	11.11	198.15	0.28	0.69
	On-Base Natural Gas Use	0.00	0.00	0.00	0.00	0.00
	Personal Vehicle Work Trips	7.24	5.18	83.13	0.14	14.76
	Added Government Vehicle Use	0.13	0.12	0.98	0.00	0.37
	2001 CAA Conformity Total	310.28	294.01	1,544.66	10.31	160.15
2003	F/A-18 E/F Operations	305.21	272.24	1,304.81	8.92	140.86
	F/A-18 E/F Engine Run-Ups	14.25	13.77	72.80	0.48	7.32
	Aircraft Refueling	0.49	0.00	0.00	0.00	0.00
	Aircraft Support Equipment	10.94	12.13	216.35	0.30	0.76
	On-Base Natural Gas Use	0.00	0.00	0.00	0.00	0.00
	Personal Vehicle Work Trips	9.06	6.48	103.91	0.18	18.45
	Added Government Vehicle Use	0.16	0.15	1.22	0.00	0.46
	2003 CAA Conformity Total	340.12	304.77	1,699.09	9.89	167.86
Phase 1	CAA Conformity Analysis Emissions, End of Phase 1	340.12	304.77	1,699.09	10.31	167.86
	Engine Test Cell	4.06	25.96	92.79	0.47	2.75
	Other On-Base Permit Sources	1.68	0.15	0.11	0.00	0.05
	Off-Base Natural Gas Use	0.00	0.00	0.00	0.00	0.00
	Additional Household Travel	38.37	36.05	476.53	1.08	111.95
	Maximum Phase 1 Annual Emissions	384.23	366.93	2,268.53	11.85	282.61

Notes: Technical details concerning emissions analyses are presented in Appendix E.
Emissions associated with Phase 2 conditions are presented in Table 4-22.
Construction emission estimates assume all aircraft-related facilities, one BEQ, and 100 units of family housing will be constructed in 1999. Other housing and personnel support facility construction is assumed to occur in stages during 2000-2002.
Analyses assume that 20 FRS aircraft will arrive in 2000 and 16 FRS aircraft will arrive in 2001; in addition, one fleet squadron will arrive each year from 2000 through 2003.
In-frame engine run-up emission estimates assume 58.5 low power run-ups (12.5 minutes) per aircraft per year plus 3.5 high power run-ups (31 minutes) per aircraft per year. Each run-up event tests a single engine.
Aircraft refueling emission estimates reflect monthly temperature patterns at NAS Lemoore.
Aircraft support equipment includes tow tractors, weapons hoists, hydraulic test stands, air start units, air conditioning units, generators, compressors, etc.
On-base natural gas use includes space heating and water heating for residential, office, and industrial buildings that do not have central boilers large enough to require APCD permits. Emissions are less than 0.005 tons per year for any pollutant.
Personal vehicle work trip emissions are based on 240 work days per year.
Added government vehicle use emissions based on 4 added vehicles for the FRS squadron and 1 added vehicle for each fleet squadron.
Engine test cell emission estimates assume 4.94 single engine tests per aircraft per year, 53% schedule checks (14 minutes) and 47% break-in tests (84.5 minutes).
Other on-base permit sources include boilers in hangars and BEQs; paint, solvent, and abrasive blasting facilities; and the Navy exchange gas station.
Off-base natural gas use includes space heating and water heating for off-base housing. Emissions are less than 0.005 tons per year for any pollutant.
Additional household vehicle travel includes all shopping and other trips plus work trips by spouses or other dependents.
Base-related and additional household vehicle travel emission estimates were calculated for full Phase 1 conditions; intermediate year vehicle emissions were estimated as a percent of 2003 emissions: 50% for 1999 and 2000, 65% for 2001, and 80% for 2002. Phase 2 aircraft arrivals will not produce further increases in personnel.

Table 4-22
Annual Emissions from Phase 2 F/A-18E/F Squadron Activity, NAS Lemoore Alternative

Year	Emissions Component	Estimated Annual Emissions, Tons per Year: Reactive Organic Compounds	Nitrogen Oxides	Carbon Monoxide	Sulfur Oxides	PM_{10}
2005	Added E/F less Replaced C/D Operations	285.39	266.94	1,287.21	8.41	130.34
	Added E/F less Replaced C/D Run-Ups	14.00	14.31	76.43	0.48	7.12
	Aircraft Refueling	0.49	0.00	0.00	0.00	0.00
	Aircraft Support Equipment	10.94	12.13	216.35	0.30	0.76
	On-Base Natural Gas Use	0.00	0.00	0.00	0.00	0.00
	Personal Vehicle Work Trips	9.06	6.48	103.91	0.18	18.45
	Added Government Vehicle Use	0.16	0.15	1.22	0.00	0.46
	2005 CAA Conformity Total	320.04	300.01	1,685.13	9.37	157.13
2006	Added E/F less Replaced C/D Operations	265.56	261.64	1,269.62	7.89	119.82
	Added E/F less Replaced C/D Run-Ups	13.74	14.85	80.06	0.48	6.92
	Aircraft Refueling	0.49	0.00	0.00	0.00	0.00
	Aircraft Support Equipment	10.94	12.13	216.35	0.30	0.76
	On-Base Natural Gas Use	0.00	0.00	0.00	0.00	0.00
	Personal Vehicle Work Trips	9.06	6.48	103.91	0.18	18.45
	Added Government Vehicle Use	0.16	0.15	1.22	0.00	0.46
	2006 CAA Conformity Total	299.95	295.25	1,671.17	8.85	146.41
2010	Added E/F less Replaced C/D Operations	177.14	235.02	1,174.75	5.55	119.82
	Added E/F less Replaced C/D Run-Ups	12.46	16.85	93.85	0.45	6.92
	Aircraft Refueling	0.49	0.00	0.00	0.00	0.00
	Aircraft Support Equipment	10.94	12.13	216.35	0.30	0.76
	On-Base Natural Gas Use	0.00	0.00	0.00	0.00	0.00
	Personal Vehicle Work Trips	9.06	6.48	103.91	0.18	18.45
	Added Government Vehicle Use	0.16	0.15	1.22	0.00	0.46
	2010 CAA Conformity Total	299.95	295.25	1,671.17	8.85	146.41
	Maximum Phase 1/Phase 2 CAA Conformity Analysis Emissions	340.12	304.77	1,699.09	10.31	167.86
	De Minimis Threshold	50.00	50.00	na	na	70.00
	Above De Minimis Level?	YES	YES	NO	NO	YES
	Reserved Conformity Offsets	100.00	367.10	na	na	151.60
	FAA Transfer or Conformity Offsets	218.28	0.00	0.00	0..00	0.00
	Net Conformity Emissions Change	21.84	(62.33)	1,699.09	10.31	16.25
	Balance After Interpollutant Trade	0.00	(24.24)	na	na	0.00
Phase 2	Base-Related CAA Conformity Analysis Emissions	210.25	270.62	1,590.62	6.48	98.55
	Engine Test Cell	4.30	30.60	150.35	0.45	1.93
	Other On-Base Permit Sources	1.68	0.15	0.11	0.00	0.05
	Off-Base Natural Gas Use	0.00	0.00	0.00	0.00	0.00
	Additional Household Travel	38.37	36.05	476.53	1.08	111.95
	End of Phase 2 Annual Emissions	254.60	337.43	2,217.08	8.01	212.48

Notes: na = not applicable; conformity requirements apply only to nonattainment pollutants.
See footnotes to Table 4-21. Additional technical details are presented in Appendix E.
Phase 2 aircraft arrivals will be one-for-one replacements of F/A-18C/D aircraft that are already based at NAS Lemoore, with aircraft for one squadron replaced each year from 2005 through 2010.
Reserved conformity offsets for NAS Lemoore were established when Castle Air Force Base closed.
Additional conformity offsets established by the closure of Castle Air Force Base are being transferred to NAS Lemoore by the Federal Aviation Administration.
Interpollutant offsets (using nitrogen oxide emissions to offset PM_{10} and reactive organic compounds) achieve the required ozone precursor and PM_{10} precursor reductions.
Engine test cell emissions for 2010 include testing of Phase 1 aircraft engines plus the change in emissions when Phase 2 F/A-18E/F aircraft are substituted for F/A-18C/D aircraft.

emissions of nonattainment pollutants. For the F/A-18E/F action, the end of Phase 1 (2003 and 2004) would produce the maximum increase in conformity-related emissions. Added emissions would decline during Phase 2 as the existing F/A-18C/D FRS squadron is reduced in size from 36 aircraft to 10 aircraft.

Maximum conformity-related ozone precursor emissions would be 340.12 tons (308.55 metric tons) per year of reactive organic compound and 304.77 tons (276.48 metric tons) per year of nitrogen oxides. PM_{10} emissions would increase by 167.86 tons (152.28 metric tons) per year. These emission quantities exceed the relevant de minimis thresholds for San Joaquin Valley (50 tons [45 metric tons] per year for ozone precursors and 70 tons [64 metric tons] per year for PM_{10} precursors).

As discussed previously in Section 3.6, EPA conformity regulations require that federal agency actions not delay timely attainment of federal air quality standards or cause new violations of those standards. Alternative ways of demonstrating compliance with these requirements are discussed in Appendix E. Compensating emission reductions from the recent closure of Castle Air Force Base have been used to demonstrate conformity with the ozone and PM_{10} state implementation plans (SIPs) as required by the EPA general conformity rule.

When Castle Air Force Base was closed, the resulting emission reductions were documented and assigned to NAS Lemoore and the Federal Aviation Administration (FAA) for subsequent use in demonstrating CAA conformity for future federal agency actions within the San Joaquin Valley. These conformity-related offsets can not be used to meet stationary source permit requirements for emission offsets; they can only be used for CAA conformity demonstration purposes. Conformity-related offsets transferred to NAS Lemoore totaled 100.00 tons (90.72 metric tons) per year of reactive organic compound emissions, 367.10 tons (333.03 metric tons) per year of nitrogen oxide emissions, and 151.60 tons (137.53 metric tons) per year of PM_{10} emissions. Conformity-related offsets transferred to the FAA totaled 2,311.20 tons (2,096.69 metric tons) per year of reactive organic compound emissions and 642.70 tons (583.05 metric tons) per year of nitrogen oxide emissions.

The conformity-related offsets previously transferred to NAS Lemoore exceed the conformity requirements for nitrogen oxide emissions but are not sufficient to meet the conformity requirements for reactive organic compounds or PM_{10}. Additional conformity-related offsets will be transferred to NAS Lemoore by the FAA to assist in meeting CCA conformity requirements for the proposed action. As explained in Mitigation 1 below, those transferred offsets in combination with existing conformity-related offsets and interpollutant offsets will allow conformity demonstration requirements to be met.

Mitigation 1: As indicated in the middle portion of Table 4-22, reserved conformity offsets held by NAS Lemoore will be supplemented by 218.28 tons

(198.02 metric tons) per year of reactive organic compound emission offsets transferred from the FAA to NAS Lemoore. That will leave a deficiency of 21.84 tons (19.81 metric tons) per year of reactive organic compound emissions, a surplus of 62.33 tons (56.54 metric tons) per year of nitrogen oxide emissions, and a deficiency of 16.26 tons (14.75 metric tons) per year of PM_{10} emissions. Nitrogen oxide emissions are recognized by the San Joaquin Valley Unified Air Pollution Control District as precursors for both ozone and PM_{10}. The surplus nitrogen oxide offsets can be used as interpollutant offsets to compensate for the deficiency in reactive organic compound and PM_{10} emissions. Accounting for the interpollutant offsets will leave a surplus of 24.24 tons (21.99 metric tons) per year of unused conformity offsets of nitrogen oxide emissions.

Impact 2: Increased emissions. Significant but mitigable increases in the overall emissions of ozone precursors would occur from implementing the proposed action at NAS Lemoore. The bottom parts of Tables 4-21 and 4-22 identify emission sources excluded from conformity determination analyses, but still associated with the F/A-18E/F action. Included in this category are stationary sources operating under permits issued by the San Joaquin Valley Unified Air Pollution Control District and indirect emission sources that the Navy cannot influence or control. Emission sources operating under air quality permits include on-base service stations, engine and airframe maintenance facilities (paint, solvent, and abrasive blasting equipment), central boilers for hangars and BEQ facilities, and engine test cells. Important indirect emission sources not under Navy control include household vehicle travel for non-work purposes and natural gas use by off-base households.

Modifications to existing maintenance facilities may require new or amended air quality permits. New central boilers and the new engine test cell would require air quality permits. Some new or replacement equipment (such as stationary generators, compressors, etc.) might require new permits from the San Joaquin Unified Air Pollution Control District. Requirements for permits or permit modifications are not in themselves significant impacts.

As indicated by the bottom portion of Table 4-21, overall emissions of ozone and PM_{10} precursors associated with Phase 1 the F/A-18E/F action would be 384.23 tons (348.57 metric tons) per year of reactive organize compounds, 366.93 tons (332.87 metric tons) per year of nitrogen oxides, and 226 282.61 tons (256.38 metric tons) per year of PM_{10}. These emission increases exceed the numerical values used to define a major stationary source under the SJVUAPCD Rule 2201 (50 tons [45 metric tons] per year for ozone precursors and 70 tons [64 metric tons] per year for PM_{10}), and represent a significant impact in a nonattainment area.

Phase 2 of the proposed action will have lower emissions than the maximum reached at the end of Phase 1. There will be no personnel increases at NAS Lemoore during Phase 2, and no new construction projects. Aircraft replacements

will occur for six of the existing ten F/A-18C/D fleet squadrons at NAS Lemoore. In addition, the existing F/A-18C/D FRS squadron will be reduced in size from 36 aircraft to 10 aircraft by the end of Phase 2. Eliminated F/A-18C/D FRS squadron operations more than compensate for the net effects of changing fleet squadron aircraft models. Comparison of the overall emission estimates at the bottom of Tables 4-21 and 4-22 identifies the reductions associated with Phase 2: 129.63 tons (117.60 metric tons) per year of reactive organic compound emissions, 29.50 tons (26.76 metric tons) per year of nitrogen oxide emissions, and 70.13 tons (63.62 metric tons) per year of PM_{10} emissions.

Mitigation 2: Conformity-related emission sources have been offset as discussed under Mitigation 1, above. Other emission sources associated with the proposed action are at least partially accounted for by source category growth factors used in the emission forecasts contained in the San Joaquin Valley ozone and PM_{10} SIPs. In addition, stationary sources requiring permits from the San Joaquin Valley Unified Air Pollution Control District may be required to arrange additional emission offsets as part of the permit process. In combination, these considerations provide adequate mitigation for the overall emissions increases associated with the proposed action.

Less than Significant Impacts

Intersection carbon monoxide concentrations. Traffic associated with the NAS Lemoore Alternative would not significantly effect ambient carbon monoxide concentrations at the main gate and Grangeville access points to NAS Lemoore. Dispersion modeling analyses indicate that peak 1-hour carbon monoxide concentrations at the major access gates would be less than 4 ppm, with peak 8-hour carbon monoxide concentrations being about 3 ppm. These concentrations are well below the impact significance thresholds set by federal and state ambient standards (35 ppm for the federal 1-hour standard, 20 ppm for the state 1-hour standard, and 9 ppm for the federal and state 8-hour standards).

4.6.2 NAF El Centro Alternative

Significant Impacts

Impact 1: Clean Air Act conformity. Significant but mitigable increases in the emissions of ozone and PM_{10} precursors would occur from implementing the proposed action at NAF El Centro. Emission sources under Navy control would result in incremental increases in reactive organic compounds, nitrogen oxides, and PM_{10} that exceed the relevant de minimis thresholds for the Salton Sea Air Basin. Consequently, a conformity determination would be required for the NAF El Centro Alternative. A draft conformity determination analysis is provided in Appendix E.

Tables 4-23 and 4-24 summarize emissions associated with the NAF El Centro Alternative. Table 4-23 provides emission estimates for Phase 1 aircraft arrivals.

Table 4-23
Annual Emissions from Phase 1 F/A-18E/F Squadron Activity, NAF El Centro Alternative

Year	Emissions Component	Estimated Annual Emissions, Tons per Year: Reactive Organic Compounds	Nitrogen Oxides	Carbon Monoxide	Sulfur Oxides	PM_{10}
1999	Construction Activity	3.52	51.00	24.42	5.09	29.99
	1999 CAA Conformity Total	3.52	51.00	24.42	5.09	29.99
2000	Construction Activity	1.56	22.78	10.41	2.30	13.30
	F/A-18 E/F Operations	138.24	129.39	591.23	4.20	65.90
	F/A-18 E/F Engine Run-Ups	5.27	5.09	26.90	0.18	2.71
	Aircraft Refueling	0.30	0.00	0.00	0.00	0.00
	Aircraft Support Equipment	4.95	5.49	97.95	0.14	0.34
	On-Base Natural Gas Use	0.00	0.00	0.00	0.00	0.00
	Personal Vehicle Work Trips	4.65	2.69	33.80	0.07	7.56
	Added Government Vehicle Use	0.09	0.08	0.60	0.00	0.23
	2000 CAA Conformity Total	155.07	165.52	760.89	6.88	90.05
2002	Construction Activity	0.87	12.70	5.76	1.28	6.73
	F/A-18 E/F Operations	279.58	254.36	1,195.45	8.30	130.75
	F/A-18 E/F Engine Run-Ups	12.09	11.67	61.72	0.41	6.21
	Aircraft Refueling	0.65	0.00	0.00	0.00	0.00
	Aircraft Support Equipment	10.02	11.11	198.15	0.28	0.69
	On-Base Natural Gas Use	0.00	0.00	0.00	0.00	0.00
	Personal Vehicle Work Trips	7.45	4.31	54.07	0.12	12.10
	Added Government Vehicle Use	0.15	0.12	0.96	0.00	0.37
	2001 CAA Conformity Total	310.80	294.28	1,516.11	10.39	156.85
2003	F/A-18 E/F Operations	305.21	272.24	1,304.81	8.92	140.86
	F/A-18 E/F Engine Run-Ups	14.25	13.77	72.80	0.48	7.32
	Aircraft Refueling	0.73	0.00	0.00	0.00	0.00
	Aircraft Support Equipment	10.94	12.13	216.35	0.30	0.76
	On-Base Natural Gas Use	0.00	0.00	0.00	0.00	0.00
	Personal Vehicle Work Trips	9.31	5.39	67.59	0.15	15.12
	Added Government Vehicle Use	0.19	0.15	1.20	0.00	0.46
	2003 CAA Conformity Total	340.63	303.67	1,662.74	9.86	164.53
Phase 1	CAA Conformity Analysis Emissions,					
	End of Phase 1	340.63	303.67	1,662.74	10.39	164.53
	Engine Test Cell	4.06	25.96	92.79	0.47	2.75
	Other On-Base Permit Sources	1.68	0.26	0.20	0.00	0.07
	Off-Base Natural Gas Use	0.00	0.00	0.00	0.00	0.00
	Additional Household Travel	41.24	37.27	389.68	1.12	116.14
	Maximum Phase 1 Annual Emissions	387.62	367.17	2,145.42	11.98	283.49

Notes: Technical details concerning emissions analyses are presented in Appendix E.
Emissions associated with Phase 2 conditions are presented in Table 4-24.
Construction emission estimates for Phase 1 assume all aircraft-related facilities, one BEQ, the BOQ, and 100 units of family housing will be constructed in 1999. Other Phase 1 housing and personnel support facility construction is assumed to occur in stages during 2000-2002.
Phase 1 analyses assume that 20 FRS aircraft will arrive in 2000 and 16 FRS aircraft will arrive in 2001; in addition, one fleet squadron will arrive each year from 2000 through 2003.
In-frame engine run-up emission estimates assume 58.5 low power run-ups (12.5 minutes) per aircraft per year plus 3.5 high power run-ups (31 minutes) per aircraft per year. Each run-up event tests a single engine.
Aircraft refueling emission estimates reflect monthly temperature patterns at NAF El Centro.
Aircraft support equipment includes tow tractors and weapons loaders.
Other permit-exempt equipment includes portable or stationary engines used for pumps, fans, compressors, generators, hoists, hydraulic test stands, air start units, etc.
On-base natural gas use includes space heating and water heating for residential, office, and industrial buildings that do not have central boilers large enough to require APCD permits. Emissions are less than 0.005 tons per year for any pollutant.
Personal vehicle work trip emissions are based on 240 work days per year.
Added government vehicle use emissions are based on 4 added vehicles for the FRS squadron and 1 added vehicle for each fleet squadron.
Engine test cell emission estimates assume 4.94 single engine tests per aircraft per year, 53% schedule checks (14 minutes) and 47% break-in tests (84.5 minutes).
Other on-base permit sources include boilers in hangars and BEQs; paint, solvent, and abrasive blasting facilities; and the Navy exchange gas station.
Off-base natural gas use includes space heating and water heating for off-base housing. Emissions are less than 0.005 tons per year for any pollutant.
Additional household vehicle travel includes all shopping and other trips plus work trips by spouses or other dependents.
Phase 1 vehicle travel emission estimates were calculated for 2003 conditions; intermediate year vehicle emissions were estimated as a percent of 2003 emissions: 50% for 1999 and 2000, 65% for 2001, and 80% for 2002.

Table 4-24
Annual Emissions from Phase 2 F/A-18E/F Squadron Activity, NAF El Centro Alternative

Year	Emissions Component	Estimated Annual Emissions, Tons per Year: Reactive Organic Compounds	Nitrogen Oxides	Carbon Monoxide	Sulfur Oxides	PM_{10}
2005	Construction Activity	1.72	24.34	12.19	2.41	12.27
	F/A-18E/F Operations	327.19	287.56	1,398.55	9.46	149.53
	F/A-18E/F Engine Run-Ups	16.11	15.57	82.29	0.55	8.27
	Aircraft Refueling	0.80	0.00	0.00	0.00	0.00
	Aircraft Support Equipment	11.49	12.73	227.15	0.31	0.79
	On-Base Natural Gas Use	0.00	0.00	0.00	0.00	0.00
	Personal Vehicle Work Trips	10.62	6.13	76.98	0.17	17.21
	Added Government Vehicle Use	0.22	0.18	1.41	0.01	0.55
	2005 CAA Conformity Total	368.14	346.50	1,798.57	12.90	188.63
2006	Construction Activity	2.26	32.27	15.44	3.24	18.16
	F/A-18E/F Operations	349.16	302.88	1,492	9.99	158.19
	F/A-18E/F Engine Run-Ups	17.97	17.36	91.79	0.61	9.23
	Aircraft Refueling	0.87	0.00	0.00	0.00	0.00
	Aircraft Support Equipment	12.03	13.33	237.96	0.33	0.82
	On-Base Natural Gas Use	0.00	0.00	0.00	0.00	0.00
	Personal Vehicle Work Trips	11.92	6.88	86.36	0.19	19.30
	Added Government Vehicle Use	0.25	0.20	1.62	0.01	0.63
	2006 CAA Conformity Total	394.46	372.93	1,925.46	14.36	206.33
2010	F/A-18E/F Operations	437.05	364.18	1,867.26	12.12	192.86
	F/A-18E/F Engine Run-Ups	25.41	24.55	129.77	0.86	13.05
	Aircraft Refueling	1.15	0.00	0.00	0.00	0.00
	Aircraft Support Equipment	14.20	15.72	281.18	0.39	0.95
	On-Base Natural Gas Use	0.00	0.00	0.00	0.00	0.00
	Personal Vehicle Work Trips	17.16	9.86	123.90	0.27	27.66
	Added Government Vehicle Use	0.39	0.31	2.47	0.01	0.96
	2010 CAA Conformity Total	495.35	414.62	2,404.58	13.65	235.48
	Maximum CAA Conformity Analysis Emissions	495.35	414.62	2,404.58	14.36	235.48
	De Minimis Threshold	100.00	100.00	na	na	100.00
	Above De Minimis Level?	YES	YES	NO	NO	YES
	Emissions Growth Included in SIP	0.00	0.00	0.00	0.00	0.00
	Other Available Offsets	0.00	0.00	0.00	0.00	0.00
	Net Conformity Emissions Change	495.35	414.62	2,404.58	14.36	235.48
	Conformity Offset Requirements	495.35	414.62	na	na	235.48
Phase 2	Base-Related CAA Conformity Analysis Emissions	495.35	414.62	2,404.58	13.65	235.48
	Engine Test Cell	7.23	46.24	165.22	0.83	4.90
	Other On-Base Permit Sources	3.04	0.52	0.39	0.00	0.13
	Off-Base Natural Gas Use	0.00	0.00	0.00	0.00	0.00
	Additional Household Travel	77.32	70.00	732.03	2.10	218.11
	End of Phase 2 Annual Emissions	582.94	531.39	3,302.22	16.59	458.62

Notes: na = not applicable; conformity requirements apply only to nonattainment pollutants.
See footnotes to Table 4-23. Additional technical details are presented in Appendix E.
Construction emission estimates for Phase 2 assume that additional aircraft maintenance and training facilities plus 75 units of family housing will be constructed in 2005. Other equipment storage, warehousing, administrative offices, housing, and personnel support facilities are assumed to be constructed in stages between 2009.
Phase 2 analyses assume that one fleet squadron will arrive each year from 2005 through 2010.

Table 4-24 provides emission estimates for Phase 2 aircraft arrivals. Because there are no existing F/A-18C/D aircraft squadrons based at NAF El Centro, Phase 2 would require additional construction projects and would add new personnel and aircraft to the base.

The main part of both Tables 4-23 and 4-24 is organized to present emission estimates for those sources requiring consideration in CAA conformity analyses. The bottom portion of each table shows maximum conformity related emissions plus emissions from additional sources that are excluded for CAA conformity analyses. Emission sources excluded from consideration in CAA conformity analyses still must be considered in the context of NEPA impact assessments.

Aircraft operations would be the largest source of long term emissions associated with this alternative. Emissions associated with aircraft operations would come from actual flight activity plus in-frame engine run-ups performed after engine maintenance. Additional emissions considered for CAA conformity analyses would come from the use of aircraft support equipment and miscellaneous engine-powered portable or stationary equipment used for aircraft and engine maintenance. Airfield facilities at NAF El Centro include fixed point utility systems, thus minimizing the use of portable generators, air compressors, and air start units. Base-related vehicle travel would be an additional source of long term emissions.

The middle portion of Table 4-24 summarizes the major components of the conformity analysis for the NAF El Centro Alternative. Maximum conformity-related emissions would occur at the end of Phase 2. Conformity-related ozone precursor emissions would be 495.35 tons (449.37 metric tons) per year of reactive organic compounds and 414.62 tons (376.14 metric tons) per year of nitrogen oxides. PM_{10} emissions would increase by 235.48 tons (213.62 metric tons) per year. These emission quantities exceed the de minimis thresholds for the Salton Sea Air Basin (100 tons [91 metric tons] per year for ozone precursors and 100 tons [91 metric tons] per year for PM_{10} precursors).

CAA conformity rules require that additional conformity offsets be arranged or that relevant SIP documents be revised to account for the added emissions before the F/A-18E/F action can be approved at NAF El Centro. A formal CAA conformity determination would be required to demonstrate that net emission increases have been addressed as required by the EPA conformity rule. A draft conformity determination analysis is provided in Appendix E. Because the NAF El Centro Alternative is not the preferred alternative, the draft conformity determination analysis in Appendix E does not seek to identify the extent to which compensating emission offsets may be available.

Mitigation 1a: To compensate for the net increase in ozone and PM_{10} precursor emissions, the Navy could formally request the Imperial County Air Pollution

Control District to modify the ozone and PM_{10} SIPs to account for increased aircraft operations at NAF EL Centro.

Mitigation 1b: As an alternative to Mitigation 1a, the Navy could seek to obtain emission offsets from sources in the Salton Sea Air Basin to compensate for the net emissions increase at NAF El Centro.

Impact 2: Increased emissions. Significant but mitigable air quality impacts would result from emissions generated by activity associated with basing F/A-18 E/F aircraft at NAF El Centro. Construction of required facilities would create temporary sources of air pollutant emissions. Aircraft operations, aircraft maintenance, and vehicle travel by added military and civilian personnel would be the major sources of long-term emissions. Emissions associated with aircraft operation would come from actual flight activity plus in-frame engine run-up tests performed after engine maintenance.

Table 4-23 summarizes emissions associated with Phase 1 of the NAF El Centro Alternative. Table 4-24 summarizes emissions associated with Phase 2 of the NAF El Centro Alternative. Emission estimates presented in both tables are separated into those that apply to the EPA Clean Air Act general conformity regulation and additional emissions that should be addressed in a NEPA context.

Aircraft operations would be the largest source of long term emissions associated with this alternative. Emissions associated with aircraft operations would come from actual flight activity plus in-frame engine run-ups performed after engine maintenance. Additional emissions would come from the use of aircraft support equipment and miscellaneous engine-powered portable or stationary equipment used for aircraft and engine maintenance. Engine test cell operations and chemicals used for aircraft and engine maintenance would also be meaningful emission sources. Base-related vehicle travel plus other household travel associated with added personnel would be the second largest source of emissions associated with this alternative.

The aircraft engine test cell would require an air quality permit from the Imperial County Air Pollution Control District (APCD). Boilers used for space heating and water heating in hangars, housing facilities, office buildings, and personnel support facilities would also require air quality permits from the APCD. Expanded fuel storage and handling facilities might also require a permit from the APCD, although these facilities might be exempted because the volatility of jet fuel is very low. Any gasoline service station operated by NAF El Centro would also require an air quality permit.

The bottom portion of Table 4-24 summarizes the overall emissions associated with the NAF El Centro Alternative. At the end of Phase 2, ozone precursor emissions would be 582.94 tons (528.83 metric tons) per year of reactive organic compounds and 531.39 tons (482.07 metric tons) per year of nitrogen oxides.

PM_{10} emissions would increase by 458.62 tons (416.05 metric tons) per year. These emission quantities exceed the numerical values used to define a major stationary source in the Salton Sea Air Basin, and thus represent a significant impact.

Mitigation 2a: Same as Mitigation 1a.

Mitigation 2b: Same as Mitigation 1b.

Less than Significant Impacts

Intersection carbon monoxide concentrations. Traffic associated with the NAF El Centro Alternative would have a less than significant effect on ambient carbon monoxide concentrations access points to NAF El Centro. Dispersion modeling analyses indicate that peak 1-hour carbon monoxide concentrations along the major access roadways would be about 3 ppm, with peak 8-hour carbon monoxide concentrations being about 2.5 ppm. These carbon monoxide concentrations are well below the impact significance thresholds set by federal and state ambient standards (35 ppm for the federal 1-hour standard, 20 ppm for the state 1-hour standard, and 9 ppm for the federal and state 8-hour standards).

4.7 NOISE

This section identifies potential noise impacts that may result from basing F/A-18E/F aircraft at one of the alternative receiving installations. Impact significance evaluations are based on a comparison of adopted land use compatibility criteria to estimated noise levels from direct and indirect noise sources associated with alternative actions. Noise modeling analyses have been used to evaluate noise impacts of construction activities, aircraft operations, and added traffic on major access roads. Technical analyses supporting the impact evaluations are presented in Appendix F. Additional discussion of land use compatibility issues (especially for on-base land uses) is presented in Section 4.1, Land Use and Airspace.

Significance Criteria

Annoyance effects are the primary consideration for most noise impact assessments. Because the reaction to noise level changes involves both physiological and psychological factors, the magnitude of a noise level change can be as important as the resulting overall noise level. A readily noticeable increase in noise levels often will be considered a significant effect by local residents even if the overall noise level is still within land use compatibility guidelines. On the other hand, noise level increases that are not noticeable to most people generally are not considered a significant change, even if the overall noise level is close to or somewhat above land use compatibility guidelines.

A variety of factors related to the nature of a noise source also can affect people's reaction to it. Most people find evening and nighttime noise the most objectionable and are more willing to accept noise sources that operate only during daytime hours. Similarly, temporary noise sources generally are tolerated more than permanent noise sources. Depending on the repetition pattern, intermittent noise sources can be either more or less objectionable than continuous noise sources.

A proposed action can have noise impacts through two different mechanisms: creating new sources of noise in an area or establishing noise-sensitive land uses in locations that will be exposed to high noise levels. Both situations must be addressed by significance criteria for noise impacts. Section 4.1, Land Use and Airspace, contains the primary discussion of land use compatibility issues for new land uses created by the proposed action.

Land use compatibility guidelines (DOD criteria for on-base land uses and general plan noise element criteria for off-base land uses) are the most common sources of criteria used to define impact significance for noise issues. Regulatory thresholds established by state and local codes (i.e., state airport noise regulations) provide additional criteria for some categories of noise sources or affected land uses.

In locations where quantitative land use compatibility criteria have been established, an alternative would have significant noise impacts if its implementation would directly or indirectly result in either of the following:

- Establish noise-sensitive land uses (residential, educational, and health care uses) in areas exposed to ambient noise levels that are higher than the applicable land use compatibility criterion; or
- Increase ambient CNEL levels by a discernable increment (3 dB or more) at noise-sensitive land uses, while resulting in an overall noise level beyond the relevant "normally acceptable" level (a CNEL of 65 dBA for on-base noise-sensitive land uses and a CNEL of 60 dBA for noise-sensitive off-base land uses).

Temporary noise sources in developed or urbanized areas that are restricted to daytime hours (such as most construction and demolition activities) would be considered a significant impact only if they affect noise-sensitive land uses and result in CNEL levels more than 10 dB above the "normally acceptable" land use compatibility criterion for the affected noise-sensitive land use.

Table 4-25 summarizes the noise impacts of the alternatives.

Table 4-25
Summary of Noise Impacts

Impact Issues	NAS Lemoore	NAF El Centro
Construction noise	◐	◐
Airfield noise	◐	●
Traffic noise	◐	◐

LEGEND:
● = Significant and not mitigable impact
◑ = Significant but mitigable impact
◐ = Less than significant impact
○ = No impact

4.7.1 NAS Lemoore Alternative

Less than Significant Impacts

Construction noise. A less than significant noise impact would result from construction and remodeling activities associated with the NAS Lemoore Alternative. Temporary construction activity would occur with projects to remodel existing facilities or to build new facilities to accommodate the F/A-18E/F aircraft and associated personnel. Most aircraft maintenance and pilot training facility construction or remodeling would occur prior to the arrival of the F/A-18E/F aircraft. Housing facilities and personnel support facilities would be constructed in stages to accommodate the staggered arrival of fleet squadron aircraft and their personnel.

Table 4-26 summarizes typical noise levels during various phases of construction projects. Construction noise would exceed a CNEL of 70 dB only for locations within 300 feet (91 m) of the construction site. Site grading would be most extensive at the new family housing site. Noise levels during building erection and finishing would be lower than those during site and foundation preparation stages. Construction noise near existing housing areas would be minimized by restricting construction activity to normal daytime periods.

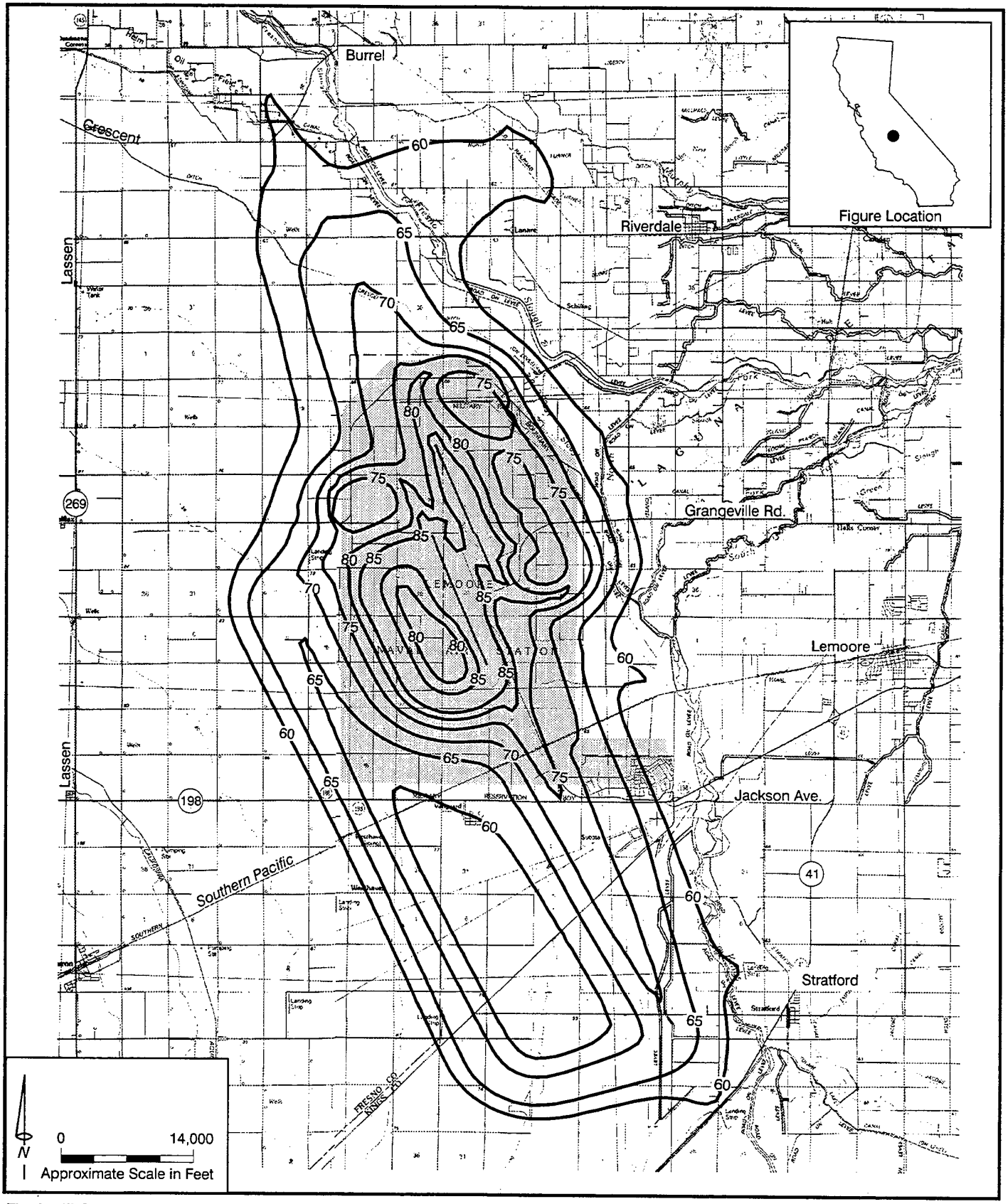
Table 4-26
Typical Construction Noise Impacts

Distance From Site (feet)	CNEL Increments (dBA) from Typical Construction Phases			
	Heavy Grading	Site Preparation	Foundation Excavation	Paving
50	85.8	84.7	85.7	82.7
100	79.7	78.6	79.6	76.7
200	73.5	72.5	73.5	70.5
400	67.2	66.2	67.2	64.1
600	63.4	62.3	63.4	60.2
800	60.5	59.6	60.6	57.3
1,000	58.3	57.3	58.4	55.0
1,500	54.0	53.1	54.1	50.6
2,000	50.7	49.9	50.9	47.2
2,500	48.0	47.3	48.3	44.4
3,000	45.7	45.1	46.1	42.0
4,000	41.8	41.3	42.3	37.9
5,280	37.6	37.3	38.3	33.5
7,500	31.8	31.6	32.7	27.4
9,000	28.5	28.4	29.5	23.9
10,560	25.4	25.3	26.5	20.6

Notes:
dBA = A-weighted decibels.
CNEL = community noise equivalent level.
Noise calculations incorporate both distance attenuation and atmospheric absorption effects. Noise estimates assume variable equipment use over a 10-hour work day with no nighttime construction activity but with equipment items concentrated in a limited area. Heavy grading assumed to require 2 scrapers, 1 grader, 2 heavy trucks, 2 front-end loaders, 1 compactor, and 1 water truck. Site preparation assumed to require 1 bulldozer, 1 backhoe, 1 front-end loader, 2 heavy trucks, and 1 water truck. Foundation excavation assumed to require 1 power shovel, 1 front-end loader, 2 heavy trucks, and 1 water truck. Paving operations assumed to require 1 grader, 1 heavy truck, 1 roller, 1 paver, and 1 water truck.

Data Sources: EPA 1971; Gharabegian et al. 1985; Acoustical Society of America 1978.

Airfield noise. A less than significant noise impact would result from increased aircraft operations at NAS Lemoore. F/A-18E/F aircraft operations would increase overall noise levels in the NAS Lemoore vicinity by as much as 5 dBA in localized areas, but off-base land uses generally would not be exposed to incompatible noise levels. Figure 4-7 illustrates anticipated CNEL contours around NAS Lemoore after the first phase of F/A-18E/F aircraft arrivals



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The 65-dB CNEL contour extends off-base along major approach and departure flight paths.

LEGEND:

—75— Community Noise Equivalent Level (CNEL)

NAS Lemoore

NAS Lemoore
Future Noise Contours

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: Wyle 1997.

Figure 4-7

(one FRS squadron and four fleet squadrons). As discussed in more detail in Section 4.1, on-base land uses at NAS Lemoore would remain compatible with resulting noise levels. The proposed BEQ facility would be designed to incorporate noise mitigation features as outlined in the AICUZ guidelines. Proposed family housing, youth center, and child development center facilities would be located in areas with acceptable noise exposure.

Off-base noise contours would expand in all directions. Noise level increases would be most apparent under flight paths south and west of the base. Affected land uses are primarily agricultural, with scattered rural residences. The town of Stratford would remain outside the 60 dB CNEL contour. The number of noise complaints received by NAS Lemoore would be expected to increase somewhat. As is currently the case, most complaints would be triggered by unusual individual flyover events rather than overall average noise level conditions.

The second phase of F/A-18E/F aircraft arrivals (72 aircraft) would be replacements for existing F/A-18C/D aircraft that are already based at NAS Lemoore. Total flight operations would decline during Phase 2 as an existing training squadron of F/A-18C/D aircraft is reduced from 36 aircraft to 10 aircraft. Because overall noise generation from the F/A-18E/F is similar to that from the F/A-18C/D, there would be no significant change in noise contours around NAS Lemoore during the Phase 2 period.

Aircraft flying between NAS Lemoore and other installations would normally fly at altitudes between 19,000 and 23,000 feet (5,791 to 7,010 m) msl. Aircraft would be at low altitudes near NAS Lemoore only during landing approaches, initial takeoff climbs, and while conducting landing practice operations. The large size of NAS Lemoore means that most airfield vicinity flight activity within 3,000 feet (914 m) of ground level would occur over or in close proximity to the base. Few off-base residences would be close to the low altitude segments of the major arrival and departure flight paths.

F/A-18E/F aircraft flights would be heard as additional discrete noise events. Table 4-27 compares estimated peak noise levels from F/A-18C/D and F/A-18E/F aircraft during takeoffs, landing approaches, and level flight at various airspeeds and power settings. Noise levels are primarily a function of engine power setting and distance from the aircraft flight path. Because it has a more powerful engine, the F/A-18E/F aircraft can maintain a given set of flight conditions at lower power settings than can existing F/A-18C/D aircraft. The F/A-18E/F aircraft is quieter than the existing F/A-18C/D aircraft during takeoffs, climbouts, and high power flight conditions. The F/A-18E/F aircraft is noisier than the existing F/A-18C/D aircraft during landing approaches and low power flight conditions.

Table 4-27
Summary of Peak Flyover Event Noise Levels (dBA) for F/A-18 Aircraft

Slant Distance (Feet)	Afterburner Takeoff 250 Knots		Military/IRP Climbout 250 Knots		Landing Approach 150 Knots		Holding Pattern 250 Knots		Cruise Power 300 Knots		Military Power 420 Knots		Military/IRP Power 420 Knots		Afterburner Power 500 Knots	
	F/A-18C/D (101% RPM)	F/A-18E/F (97% RPM)	F/A-18C/D (101% RPM)	F/A-18E/F (96% RPM)	F/A-18C/D (89% RPM)	F/A-18E/F (84% RPM)	F/A-18C/D (82% RPM)	F/A-18E/F (80% RPM)	F/A-18C/D (85% RPM)	F/A-18E/F (83% RPM)	F/A-18C/D (92% RPM)	F/A-18E/F (85% RPM)	F/A-18C/D (101% RPM)	F/A-18E/F (96% RPM)	F/A-18C/D (101% RPM)	F/A-18E/F (97% RPM)
200	131.8	127.9	129.0	124.1	117.1	121.4	102.3	108.9	100.6	110.8	118.08	113.53	130.2	123.2	133.7	126.8
300	128.6	124.7	125.5	120.9	108.6	113.0	93.8	99.7	97.4	107.4	114.54	110.37	126.6	120.0	130.5	123.7
400	126.3	122.5	122.9	118.7	107.1	111.5	92.3	98.2	95.2	105.0	112.01	108.10	124.1	117.7	128.2	121.5
500	124.5	120.8	121.0	116.9	104.5	108.9	89.7	95.4	93.4	103.1	110.04	106.33	122.1	116.0	126.4	119.7
600	123.0	119.3	119.3	115.4	103.9	108.3	89.1	94.7	91.9	101.5	108.42	104.86	120.5	114.5	124.9	118.3
700	121.8	118.1	118.0	114.2	103.3	107.7	88.5	94.1	90.7	100.2	107.04	103.62	119.1	113.3	123.7	117.1
800	120.7	117.0	116.8	113.1	102.6	107.1	87.8	93.4	89.6	99.0	105.83	102.53	117.9	112.2	122.6	116.0
900	119.7	116.1	115.7	112.1	101.7	106.2	86.9	92.4	88.6	98.0	104.76	101.56	116.9	111.2	121.6	115.0
1,000	118.8	115.2	114.7	111.3	100.7	105.1	85.9	91.2	87.8	97.0	103.80	100.69	115.9	110.3	120.7	114.2
1,250	117.0	113.4	112.7	109.4	99.8	104.2	85.0	90.3	85.9	95.0	101.74	98.82	113.8	108.5	118.9	112.3
1,500	115.4	111.9	110.9	107.8	98.7	103.2	83.9	89.1	84.3	93.3	100.03	97.25	112.1	106.9	117.3	110.8
1,750	114.1	110.6	109.5	106.5	95.4	99.8	80.6	85.5	83.0	91.8	98.56	95.91	110.7	105.6	116.0	109.5
2,000	112.9	109.4	108.2	105.3	92.9	97.4	78.1	82.9	81.8	90.6	97.27	94.72	109.4	104.4	114.8	108.4
2,500	110.9	107.4	106.0	103.2	90.9	95.3	76.1	80.6	79.7	88.3	95.06	92.68	107.2	102.3	112.8	106.4
3,000	109.2	105.8	104.1	101.5	89.1	93.6	74.3	78.8	78.0	86.5	93.21	90.95	105.3	100.6	111.1	104.7
4,000	106.4	103.0	101.1	98.6	85.9	90.4	71.1	75.3	75.1	83.4	90.15	88.08	102.3	97.7	108.3	102.0
5,000	104.2	100.8	98.6	96.3	83.9	88.3	69.1	73.1	72.7	80.8	87.66	85.70	99.8	95.4	106.1	99.7
6,000	102.2	98.8	96.4	94.2	83.2	87.6	68.4	72.3	70.6	78.5	85.51	83.64	97.6	93.3	104.1	97.8
7,000	100.5	97.1	94.5	92.3	82.8	87.2	68.0	71.9	68.8	76.5	83.60	81.79	95.7	91.4	102.4	96.1
8,000	98.9	95.5	92.8	90.7	81.6	86.0	66.8	70.7	67.1	74.6	81.87	80.10	94.0	89.7	100.8	94.5
9,000	97.5	94.1	91.2	89.1	78.8	83.1	64.0	67.6	65.5	72.9	80.28	78.52	92.4	88.2	99.3	93.0
10,000	96.1	92.7	89.7	87.6	74.5	78.8	59.7	62.9	64.0	71.3	78.80	77.05	90.9	86.7	98.0	91.7
12,500	93.0	89.6	86.3	84.2	67.6	71.7	52.8	55.4	60.6	67.6	75.42	73.67	87.5	83.3	94.9	88.6
15,000	90.3	86.8	83.3	81.2	67.3	71.4	52.5	55.1	57.5	64.2	72.40	70.60	84.5	80.2	92.2	85.8

Note: Peak flyover event noise levels based on analyses described in Appendix F.

Table 4-27 summarizes noise estimates for eight different flight conditions. Five of these (takeoff, climbout, landing approach, holding pattern, and cruise power) would dominate aircraft operations in the NAS Lemoore vicinity. Noise conditions in the airfield vicinity are determined primarily by takeoff, climbout, and landing approach events. Cruise power conditions would be used for flights to and from other facilities and training ranges. High power flight conditions would occur primarily at training ranges.

Noise from individual flyover events in the airfield vicinity will be audible for only a brief time (about 1 to 1.5 minutes for landing approach airspeeds and less than 1 minute for takeoff and climbout airspeeds). Peak noise levels would last only a few seconds during a flyover event at any one location. Consequently, the significance of peak noise levels for flyover events cannot be judged by reference to the 24-hour average noise levels used for land use compatibility criteria. As a point of comparison, many appliance and equipment items common to residential and agricultural land uses generate peak noise levels of 80 to 90 dBA at close distances. A typical 3-axle truck driving by at 35 mph (56 kph) produces a peak noise level of about 82 dBA at a distance of 50 feet (15 m).

Testing of F/A-18E/F engines after maintenance work would be an additional localized source of noise at engine test cell facilities and runway apron power check pads. Noise impacts from testing jet engines would be minimized because enclosures are used at engine test cells and noise barriers are used at any power check pads near noise-sensitive land uses.

Traffic noise. Additional traffic associated with the NAS Lemoore Alternative would have a less than significant effect on ambient noise levels along major access roadways. It generally takes a doubling of traffic volumes to cause a 3 dBA noise level increase. Added traffic on Highway 198 and Grangeville Boulevard would increase traffic noise levels by less than 1 dBA. Such small noise level changes would not be noticeable. Traffic volume changes on Highway 41 would be too small to change existing traffic noise levels.

Other Impact Issues

Many state and federal land management agencies do not have any adopted noise criteria for open space, natural resource management, or recreation lands under their jurisdiction. The National Park Service, for example, identifies "sounds of nature" and "natural quiet" as resources to be protected, but does not have any quantitative criteria for determining when the magnitude or frequency of noise events would constitute an adverse impact on these resources. Consequently, noise impacts affecting park and wilderness lands are described quantitatively in the following discussion, but are not categorized as either significant or less than significant. Appendix F presents additional details concerning the analyses discussed below.

Access corridors to the R-2508 Airspace Complex. As indicated previously in Figure 3-3, there are two primary flight corridors connecting NAS Lemoore with the R-2508 Complex. These corridors are identified by the names assigned to the associated R-2508 access points (Kiote and Swoop). A third access point (Mitel) north of the Kiote access point is used primarily by the Air National Guard unit in Fresno. A fourth access point (Fangg) has been proposed north of the Mitel access point, near the northwestern corner of the R-2508 Complex (see Figure 3-2). The proposed Fangg access point is not yet approved by the FAA. Aircraft from NAS Lemoore normally enter the R-2508 Complex via one access point and return to NAS Lemoore using a different access point, thus separating aircraft flying in different directions at similar altitudes.

The eastern end of the flight corridors that enter the R-2508 Complex cross the Sierra Nevada mountains. The Swoop access point is over the Golden Trout Wilderness area near the southern boundary of Sequoia National Park. The Kiote access point is above the central part of Sequoia National Park. The proposed Fangg access point would have aircraft overfly the northern portion of Kings Canyon National Park, entering the R-2508 Complex over the John Muir Wilderness. NAS Lemoore aircraft using the Swoop and Kiote access corridors normally fly at 19,000 to 23,000 feet (5,791 to 7,010 m) msl. This results in overflights that are generally at least 6,000 feet (1,828 m) AGL. F/A-18 aircraft from NAS Lemoore normally fly these corridors at an airspeed of 300 knots (556 kph) in a cruise power setting.

Existing NAS Lemoore air traffic along these corridors generates an annual average CNEL level well below 50 dBA (Wyle Laboratories 1998). F/A-18E/F aircraft added by Phase 1 of the proposed action would increase use of the Swoop and Kiote corridors by 69.5 percent. Because F/A-18E/F aircraft are noisier than F/A-18C/D aircraft when operated at cruise power conditions, the addition of F/A-18E/F aircraft operations on the Swoop and Kiote corridors would increase annual average CNEL levels by about 6 dBA. The resulting CNEL levels along the highest ridgelines would be between 50 and 55 dBA, with lower noise levels occurring at lower ground elevations (Wyle Laboratories 1998). If approved by the FAA, availability of the Fangg access point would redistribute most flights between NAS Lemoore and the R-2508 Complex over three primary corridors rather than two, but the relative mix of flights along these corridors has not been determined.

Phase 2 of the proposed action would replace existing F/A-18C/D aircraft with F/A-18E/F aircraft. At the same time, an existing F/A-18C/D training squadron would be reduced from 36 aircraft to 10 aircraft. In addition, F/A-18E/F aircraft squadrons would make fewer sorties to the R-2508 Complex than do the existing F/A-18C/D squadrons. As a result, total annual F/A-18 aircraft sorties between NAS Lemoore and the R-2508 Complex would decline throughout the Phase 2 period. By the end of the Phase 2 period (2010), aircraft from NAS Lemoore would be expected to conduct 12,753 annual sorties to the R-2508 Complex, as

compared to 9,900 sorties in 1997 and 16,785 sorties at the end of Phase 1 (2004). Annual average CNEL levels along the Swoop and Kiote corridors would be slightly lower at the end of Phase 2 than at the end of Phase 1.

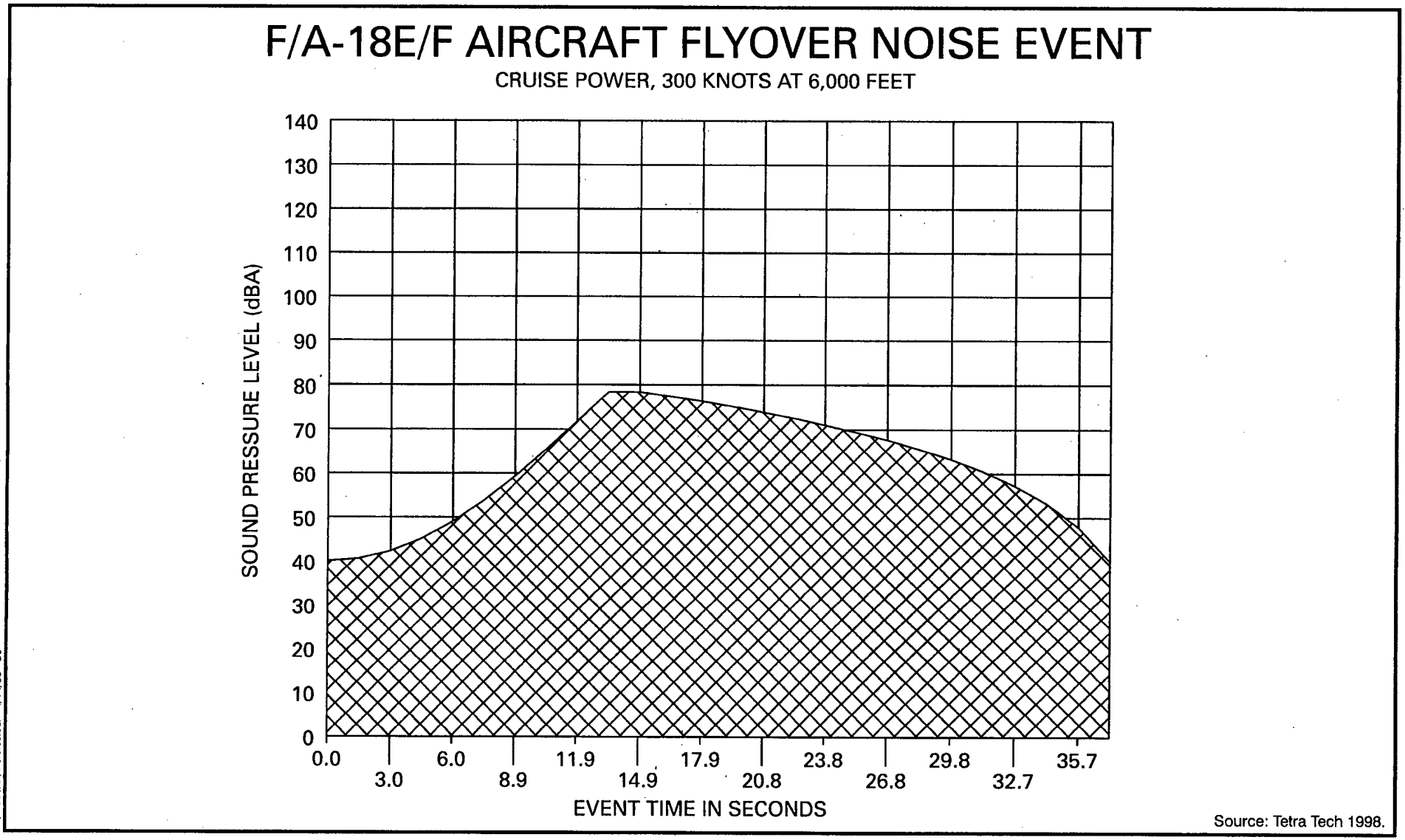
Visitors to national park and wilderness areas will be affected by and will respond to individual flyover events rather than annual average noise conditions. Figure 4-8 illustrates a typical F/A-18E/F flyover event at the highest peaks and ridgelines along the flight corridors between NAS Lemoore and the R-2508 Complex (ground elevations of 13,000 to 14,000 feet [3,962 to 4,467 m]). Peak flyover event noise levels would be about 79 dBA. The average noise level during a 37-second flyover event would be about 72 dBA. Peak and average flyover event noise levels would be lower at locations below the highest ridgelines. At ground elevations between 9,000 and 10,000 feet (2,743 and 3,048 m), peak noise levels would be about 71 to 72 dBA. At ground elevations of between 6,000 and 7,000 feet (1,828 and 2,133 m), peak noise levels would be about 65 dBA. Peak noise levels would be about 3 dBA higher than those noted above if two aircraft fly in relatively close formation: 82 dBA for ridgelines or peaks at 13,000 to 14,000 feet (3,962 to 4,467 m); 74 to 75 dBA for ground elevations between 9,000 and 10,000 feet (2,743 and 3,048 m); and 68 dBA for ground elevations between 6,000 and 7,000 feet(1,828 and 2,133 m) .

Although the peak flyover event noise levels would be higher than average background noise levels in national parks and wilderness areas, they are not substantially above the range of noise levels that can occur under natural conditions. For example, leaves or tall grass rustling in a moderate wind can generate sustained noise levels of 55 dBA (Cowan 1994). Strong winds can generate relatively sustained noise levels above 65 dBA, with peak noise levels being even higher.

The R-2508 Airspace Complex. Once aircraft enter the R-2508 Airspace Complex, they come under the control of the High Desert TRACON. Training activities conducted within the R-2508 Complex are widely dispersed over a very large area, and occur over a significant range of flight altitudes. Most of the MOAs associated with the R-2508 Complex provide for flight altitudes between 200 feet (91 m) AGL and 18,000 feet (5,486 m) msl. Aircraft are required to maintain flight altitudes of at least 3,000 feet (914 m) AGL over Sequoia National Park, Kings Canyon National Park, the 1977 boundaries of the former Death Valley National Monument, and the 1977 boundary portion of the Domeland Wilderness. ATCAA designations above the MOAs provide for flight operations up to 60,000 feet (18,288 m) msl.

Aircraft from NAS Lemoore generally use the northern half of the R-2508 Complex (the Owens, Saline, and Panamint MOAs illustrated in Figure 3-2) more heavily than the southern half of the complex. The northwestern portion of the R-2508 Complex (Owens MOA) overlies significant portions of Kings Canyon

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Peak flyover event noise by F/A-18E/F aircraft at 83% power, 300 knots air speed, and 6,000 feet above ground level would be 79 dBA.

F/A-18E/F Flyover Noise Event, Kiote/Swoop Corridors

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Tetra Tech, Inc.

Figure 4-8

National Park, Sequoia National Park, and several wilderness areas. The eastern part of the R-2508 Complex overlies a major portion of Death Valley National Park. The Owens Valley occupies the north-central portion of the R-2508 Complex. The southern half of the R-2508 Complex encompasses the southern end of the Sierra Nevada and desert areas northward from Edwards Air Force Base and the segment of I-15 that runs eastward from Barstow.

Aircraft based at NAS Lemoore currently account for about 13 percent of all aircraft flights conducted in or passing through the R-2508 Complex. By the end of Phase 1 of the proposed action, the additional sorties by NAS Lemoore aircraft would increase overall use of the R-2508 Complex by 9.2 percent, assuming no concurrent increases in flight operations by aircraft from other military bases, national guard units, private aircraft, or commercial aircraft that fly through the area.

Considering only military aircraft, Phase 1 of the proposed action would increase military aircraft operations in the R-2508 Complex by 19.5 percent (assuming no concurrent increase in operations by aircraft from other military bases or national guard units). On a daily average basis, Phase 1 of the proposed action would increase the number of military aircraft sorties in the R-2508 Complex from 97 sorties per day to 116 sorties per day. Ignoring the complexities of differences in flight profiles and noise generation among different types of military aircraft, a 19.5 percent increase in military aircraft sorties (from 35,276 sorties in 1997 to 42,161 sorties in 2004) would be expected to produce less than a 1-dBA increase in average CNEL levels.

Phase 2 of the proposed action would result in the one-for-one replacement of six F/A-18C/D aircraft squadrons by six F/A-18E/F aircraft squadrons. In addition, the existing F/A-18C/D training squadron would be reduced in size from 36 aircraft to 10 aircraft. The net result of these changes would be a reduction in flights from NAS Lemoore to the R-2058 Complex compared to Phase 1 conditions. Military aircraft sorties in the R-2508 Complex would drop to 38,129 annual sorties in 2010 (104 sorties per day), as compared to 42,161 sorties in 2004 and 35,276 sorties in 1997.

Phase 2 would reduce noise impacts in the R-2508 Complex compared to Phase 1 conditions. Not only would there be fewer sorties at the end of Phase 2 compared to Phase 1, but most of those sorties would be conducted by the newer F/A-18E/F aircraft, which are less noisy at high power settings than the existing F/A-18C/D aircraft.

Overall average noise conditions are particularly relevant to communities in the Owens Valley and Mojave Desert portions of the R-2508 Complex. Individual overflight events are of more concern to visitors at the various national parks and wilderness areas. Variations in flight conditions result in a wide range of potential noise levels near aircraft flight tracks. The highest noise levels will occur when

aircraft fly at high power settings, high airspeeds, and low flight altitudes. As noted, pilots using the R-2508 Complex are instructed to maintain flight altitudes of at least 3,000 feet (914 m) AGL over designated noise-sensitive areas (as illustrated previously in Figure 3-2). Procedures for dealing with violations of the flight altitude restrictions are discussed in Section 3.1.

Figure 4-9 illustrates typical flyover event noise levels for an F/A-18E/F aircraft flying 3,000 feet (914 m) AGL at 420 knots (778 kph) at a military power. The peak noise level under these conditions would be about 101 dBA. The peak noise level for F/A-18E/F aircraft under these conditions is about 5 dBA lower than the peak noise level generated by existing F/A-18C/D aircraft at similar flight conditions (see Table 4-27 and Figure 3-22). Noise levels would increase rapidly over a 4- or 5-second interval during the approach segment of an overflight event and then would diminish gradually after the aircraft passes overhead. Aircraft overflights at lower altitudes would generate higher peak noise levels: 104 dBA for overflights at 2,000 feet (609 m) AGL, and 110 dBA for overflights at 1,000 feet (304 m) AGL.

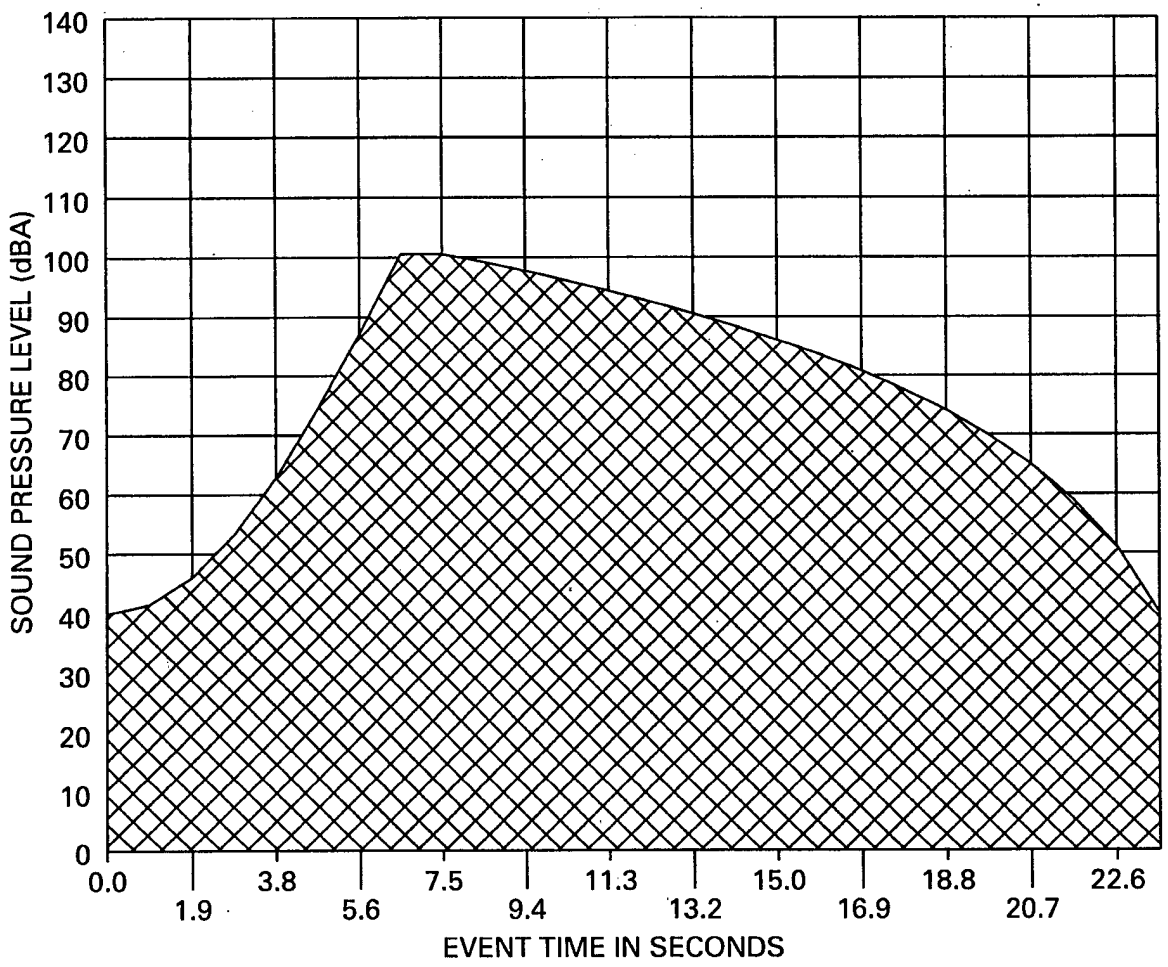
Figure 4-10 illustrates typical flyover event noise levels for an F/A-18E/F aircraft flying 3,000 feet (914 m) AGL at 500 knots (927 kph) using afterburners. The peak noise level under these conditions would be about 105 dBA. The peak noise level for F/A-18E/F aircraft under these conditions is about 6 dBA lower than the peak noise level generated by existing F/A-18C/D aircraft at similar flight conditions (see Table 4-27 and Figure 3-23). Noise levels would increase very rapidly over a 3-second interval during the approach segment of an overflight event and then would diminish gradually after the aircraft passes overhead. Aircraft overflights at lower altitudes would generate higher peak noise levels: 108 dBA for overflights at 2,000 feet (609 m) AGL, and 114 dBA for overflights at 1,000 feet (304 m) AGL.

Very rapid increases in noise levels during the approach segment of an overflight event can produce startle reactions for people or animals under the flight path. Such reactions can occur when people or animals are shielded by terrain features from the approach segment of the flight path, resulting in a sudden increase in noise levels when the aircraft appears directly overhead. Startle reactions can also be produced in the absence of terrain shielding when low-flying aircraft travel at speeds that are a significant fraction of the speed of sound. The approach segment of the noise event in such cases is very short, giving little advance warning of the noise peak that occurs as the aircraft passes overhead.

Military training routes. As noted in Section 3.1, aircraft from NAS Lemoore use a number of low altitude military training routes. All but one of these routes avoid significant noise sensitive land uses. The VR-1257 low altitude military training route passes over portions of Joshua Tree National Park and Anza-Borrego Desert State Park.

F/A-18E/F AIRCRAFT FLYOVER NOISE EVENT

MILITARY POWER, 420 KNOTS AT 3,000 FEET



Source: Tetra Tech 1998.

Peak flyover event noise by F/A-18E/F aircraft at 96% power, 420 knots air speed, and 3,000 feet above ground level would be 101 dBA.

F/A-18E/F Flyover Noise Event, Military Power in the R-2508 Complex

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

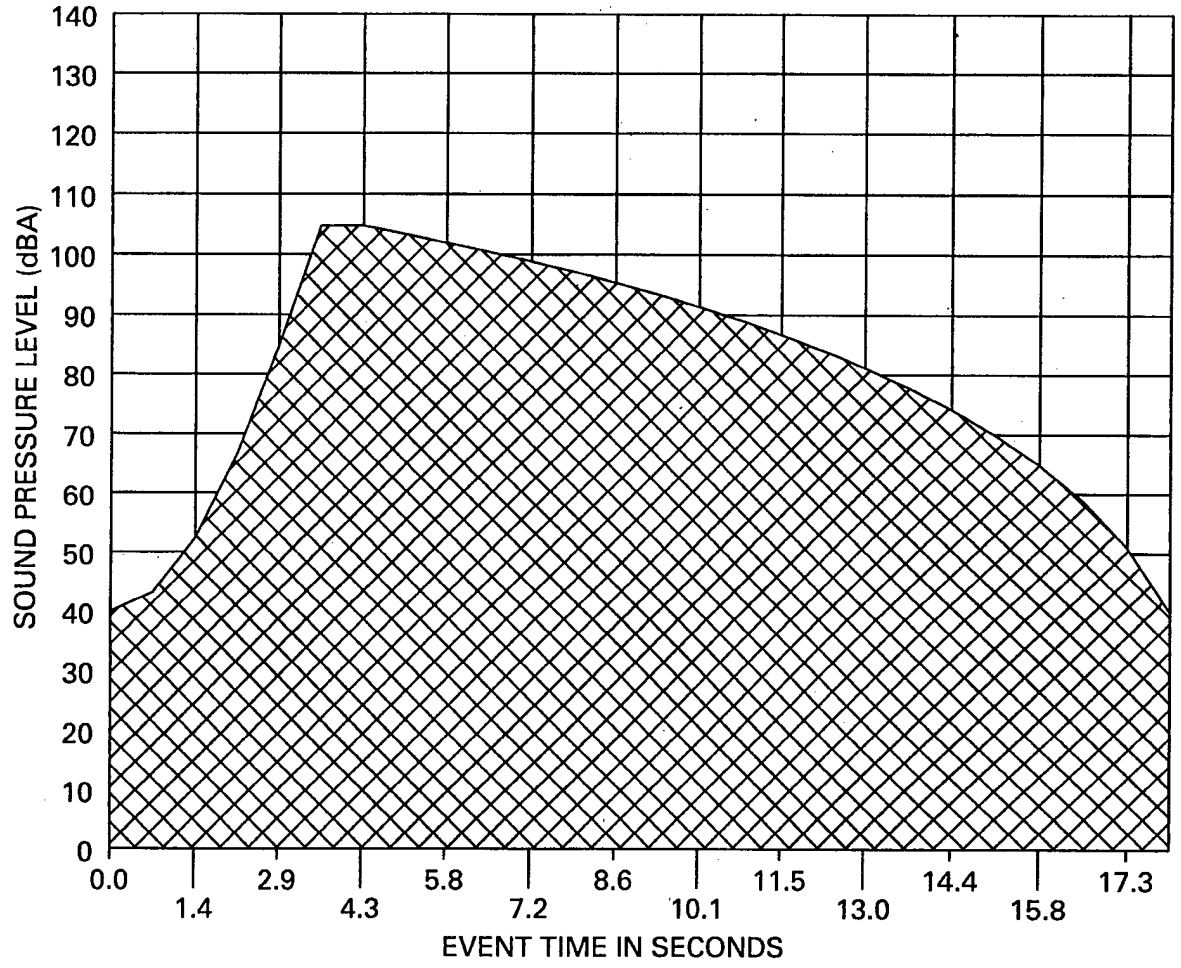
Tetra Tech, Inc.

Figure 4-9

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F/A-18E/F AIRCRAFT FLYOVER NOISE EVENT

AFTERBURNER, 500 KNOTS AT 3,000 FEET



Source: Tetra Tech 1998.

Peak flyover event noise by F/A-18E/F aircraft at 97% power with afterburners, 500 knots air speed, and 3,000 feet above ground level would be 105 dBA.

F/A-18E/F Flyover Noise Event, Afterburner Power in the R-2508 Complex

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Tetra Tech, Inc.

Figure 4-10

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Aircraft using VR-1257 are required to fly below an altitude ceiling of 1,500 feet (457 m) AGL. Various portions of the corridor are normally flown at altitudes of 400 feet (122 m) AGL, 1,000 feet (305 m) AGL, or 1,500 feet (457 m) AGL. The portion of the VR-1257 corridor that crosses Joshua Tree National Park is flown at the maximum allowable altitude of 1,500 feet (457 m) AGL.

Current use of the VR-1257 corridor is relatively low. There were 164 aircraft sorties flown along the VR-1257 corridor during 1997, with 87 of those sorties being flown by F/A-18C/D aircraft. Phase 1 of the proposed action would add 50 sorties per year by F/A-18E/F aircraft, resulting in 214 annual sorties by 2004. This represents about one added aircraft sortie per week (from 3.2 sorties per week to 4.1 sorties per week).

The added F/A-18E/F aircraft sorties along VR-1257 would increase annual average CNEL levels by an undetectable 0.5 dBA. Annual average CNEL noise levels would be 55 dBA for those portions of the route flown at 400 feet above ground level, and less than 50 dBA for those portions of the corridor flown at altitudes of 1,000 or 1,500 feet (305 or 457 m) AGL (Wyle Laboratories 1998).

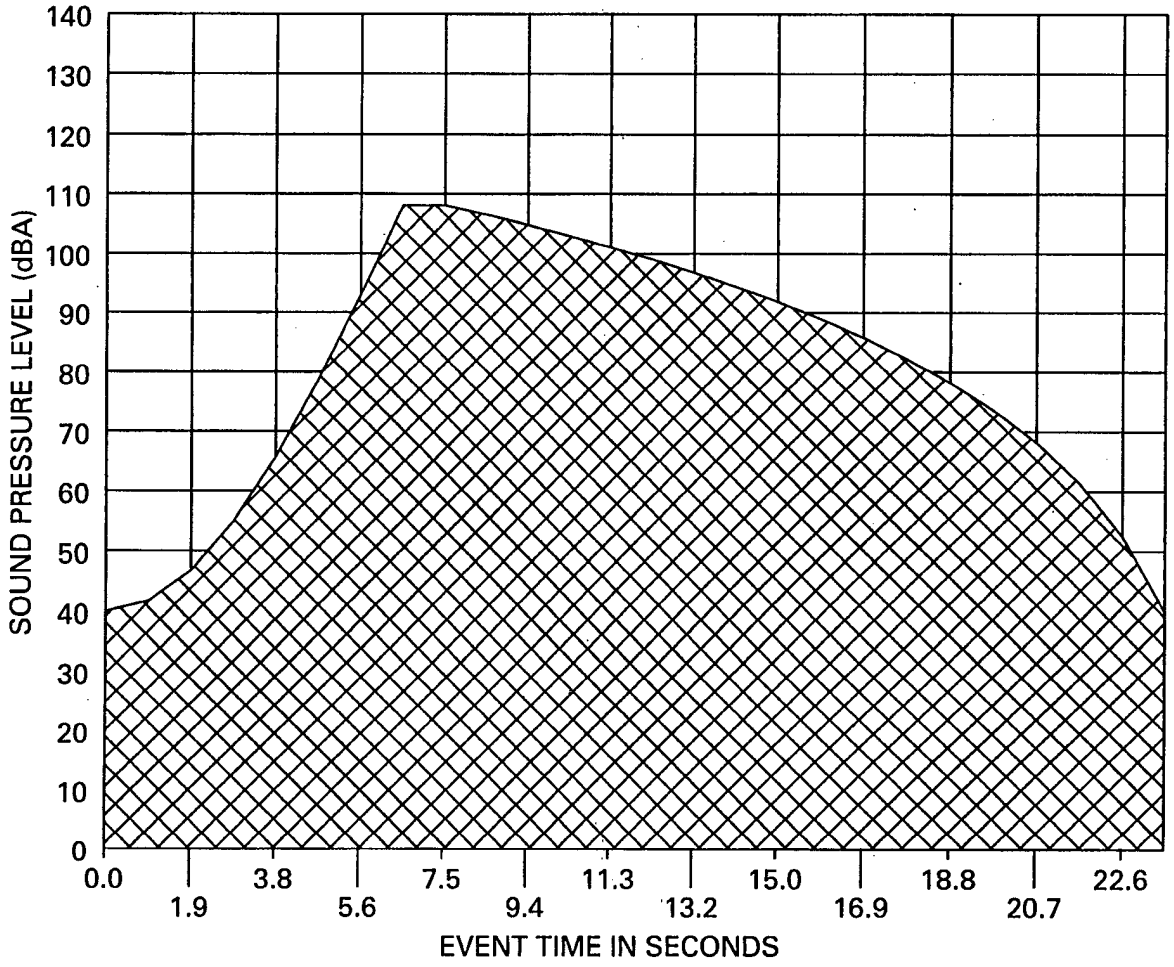
F/A-18E/F flight events along the VR-1257 corridor would produce brief episodes of high noise levels. Figure 4-11 illustrates typical flyover event noise levels for an F/A-18E/F aircraft flying 400 feet (122 m) AGL at 420 knots (788 kph) and 85 percent power. The peak noise level under these conditions would be about 108 dBA. Figure 4-12 illustrates typical flyover event noise levels for an F/A-18E/F aircraft flying 1,000 feet (305 m) AGL at 420 knots (788 kph) and 85 percent power. The peak noise level under these conditions would be about 101 dBA. Figure 4-13 illustrates typical flyover event noise levels for an F/A-18E/F aircraft flying 1,500 feet (457 m) AGL at 420 knots (788 kph) and 85 percent power. The peak noise level under these conditions would be about 97 dBA. In all cases, noise levels would increase rapidly over a 4- or 5-second interval during the approach segment of an overflight event and then would diminish gradually after the aircraft passes overhead.

As noted, the F/A-18E/F aircraft is less noisy than the F/A-18C/D aircraft when operated at high airspeeds and high power settings. The peak noise levels for F/A-18E/F aircraft under flight conditions used along VR-1257 are about 3 dBA lower than those generated by existing F/A-18C/D aircraft (see Figures 3-24 through 3-26 in Section 3.7).

Phase 2 of the proposed action would reduce noise impacts along the VR-1257 corridor slightly as F/A-18E/F aircraft replace existing F/A-18C/D aircraft. In addition, the reduction in the size of the F/A-18C/D training squadron (from 36 aircraft to 10 aircraft) might lead to a minor reduction in the number of F/A-18 aircraft sorties along the VR-1257 corridor.

F/A-18E/F AIRCRAFT FLYOVER NOISE EVENT

VR-1257 SORTIE, 420 KNOTS AT 400 FEET



Source: Tetra Tech 1998.

Peak flyover event noise by F/A-18E/F aircraft at 85% power, 420 knots air speed, and 400 feet above ground level would be 108 dBA.

F/A-18E/F Flyover Noise Event, Military Power at 400 Feet in the VR-1257 MTR

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

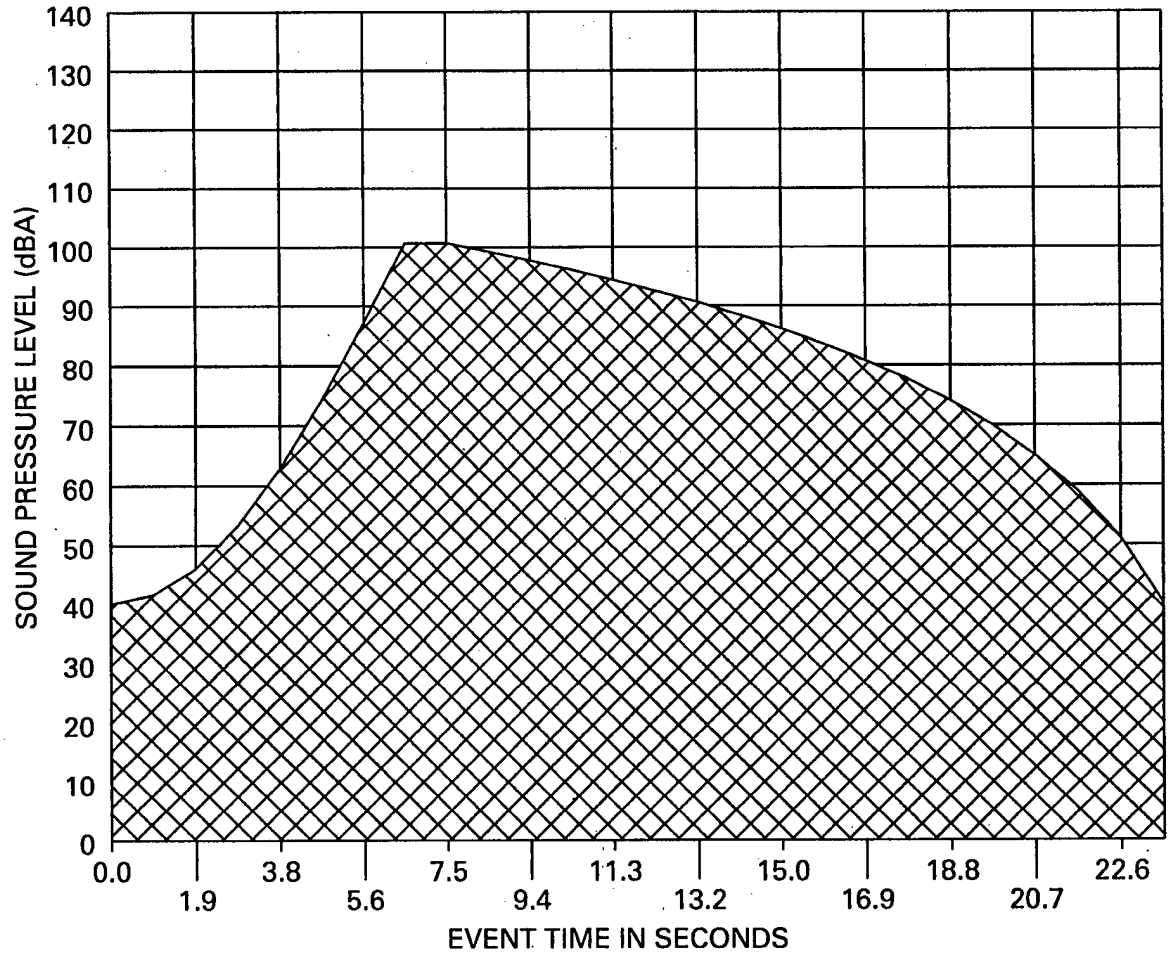
Tetra Tech, Inc.

Figure 4-11

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F/A-18E/F AIRCRAFT FLYOVER NOISE EVENT

VR-1257 SORTIE, 420 KNOTS AT 1,000 FEET



Source: Tetra Tech 1998.

Peak flyover event noise by F/A-18E/F aircraft at 85% power, 420 knots air speed, and 1000 feet above ground level would be 101 dBA.

F/A-18E/F Flyover Noise Event, Military Power at 1,000 Feet in the VR-1257 MTR

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

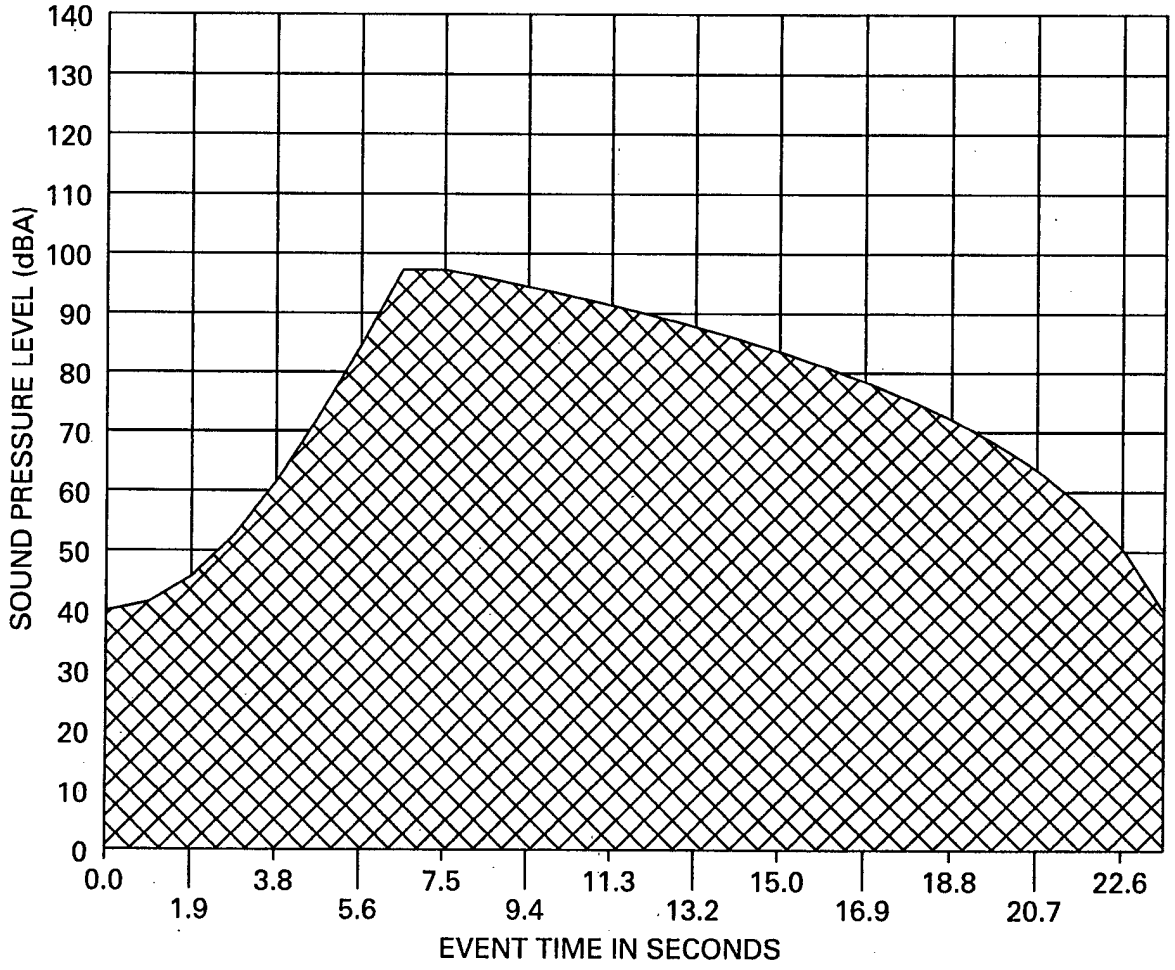
Tetra Tech, Inc.

Figure 4-12

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F/A-18E/F AIRCRAFT FLYOVER NOISE EVENT

VR-1257 SORTIE, 420 KNOTS AT 1,500 FEET



Source: Tetra Tech 1998.

Peak flyover event noise by F/A-18E/F aircraft at 85% power, 420 knots air speed, and 1500 feet above ground level would be 97 dBA.

F/A-18E/F Flyover Noise Event, Military Power at 1,500 Feet in the VR-1257 MTR

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Tetra Tech, Inc.

Figure 4-13

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4.7.2 NAF El Centro Alternative

Significant Impacts

Impact 1. Airfield noise. A significant and not mitigable noise impact would result from increased flight operations associated with the basing of F/A-18E/F aircraft at NAF El Centro. The resulting increase in flight operations would significantly increase the geographic extent of areas impacted by aircraft noise.

As discussed in Section 4.1, all proposed on-base facilities (including BEQ/BOQ facilities, family housing, youth center, and child development center facilities) are proposed for locations that would be exposed to CNEL levels of 80 to 85 dBA. AICUZ guidelines categorize such noise exposures as being incompatible with the proposed land uses. As noted in Section 4.1, the only mitigation for this on-base impact would be to locate noise-sensitive facilities in off-base areas having acceptable noise exposure.

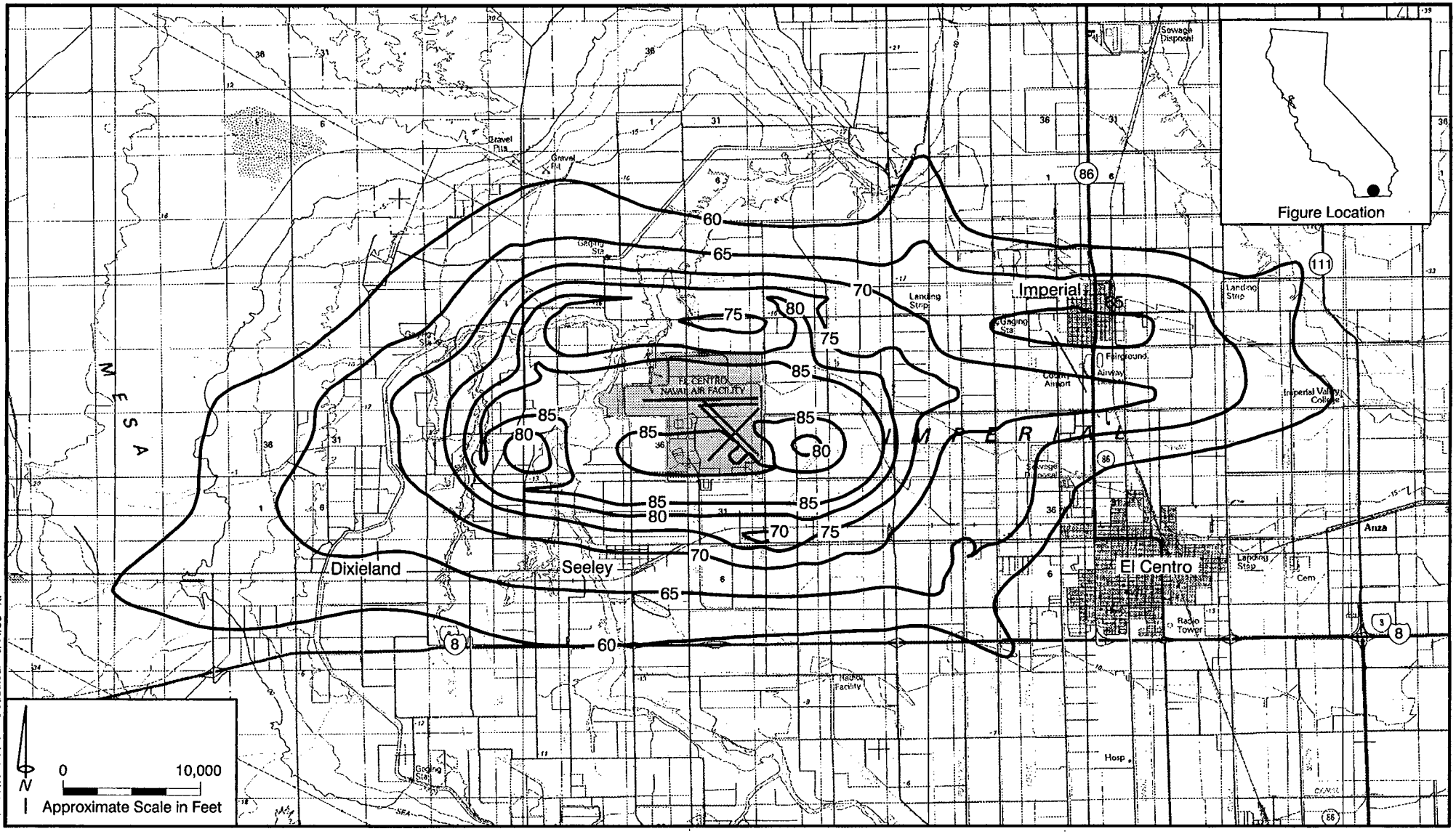
Off-base areas would also be affected by significant noise level increases. Following the first phase of F/A-18E/F aircraft arrivals (one FRS squadron and four fleet squadrons), most areas within 3 to 5 miles of the base would experience noise level increases of 5 dB or more. As indicated in Figure 4-14, the 65 dB CNEL contour would encompass significant off-base areas. The city of Imperial would be encompassed by the 65 dB CNEL contour, and the community of Seeley would be within the 70 dB CNEL contour. One school in Seeley and at least two of the three schools in Imperial would be impacted by CNEL values above 65 dB.

The second phase of F/A-18E/F aircraft arrivals (72 additional fleet squadron aircraft) would produce additional increases in flight operations. Because fleet squadrons would be periodically assigned to duty on aircraft carriers, total F/A-18E/F operations at NAF El Centro would be increased by only 30 percent by the additional 72 aircraft. The increase in flight operations would cause the 65 and 70 dB noise contours to extend somewhat farther from NAF El Centro than indicated in Figure 4-14. Most areas within 5 miles of NAF El Centro probably would experience a further CNEL increase of about 1 dB.

The number of noise complaints received by NAF El Centro would be expected to increase. Airfield orientation and air traffic control considerations make it infeasible to alter flight patterns in a manner that would adequately mitigate aircraft noise impacts.

Noise from individual flyover events would be the same as presented in Table 4-27 and discussed for the NAS Lemoore Alternative.

Testing F/A-18E/F engines after maintenance work would be an additional localized source of noise at engine test cell facilities and runway apron power



The addition of F/A-18EF aircraft under the cumulative scenario would cause noticeable changes to the existing noise contours. See Fig 3-33.

LEGEND:

—75— Community Noise Equivalent Level (CNEL)

NAF El Centro

NAF El Centro
Future Noise Contours

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Source: Wyle 1997.

Figure 4-14

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check pads. Noise impacts from testing jet engines would be minimized because enclosures are used at engine test cells and noise barriers are used at any power check pads near noise-sensitive land uses.

Less Than Significant Impacts

Construction noise. A less than significant noise impact would result from construction activities associated with the NAF El Centro Alternative. Construction-related noise conditions would be similar to those shown in Table 4-26 and discussed for the NAS Lemoore Alternative. Construction noise near existing housing areas would be minimized by restricting construction activity to normal daytime periods.

Traffic noise. Additional traffic associated with the NAF El Centro Alternative would have a less than significant effect on ambient noise levels along major access roadways. Added traffic on Bennett Road, Evans Hewes Road, and other area roadways would increase traffic noise levels by less than 1 dBA. Such small noise level changes would not be noticeable.

Other Impact Issues

Access corridors to the R-2508 Airspace Complex. During Phase 1 under the NAF El Centro Alternative, existing aircraft squadrons at NAS Lemoore would continue their current pattern of training flights to and from the R-2508 Complex. The F/A-18E/F aircraft added to NAF El Centro would use various training ranges, including the R-2508 Complex. F/A-18E/F aircraft would use the R-2508 Complex 36 percent less frequently under the NAF El Centro Alternative than under the NAS Lemoore Alternative (4,797 sorties per year under the NAF El Centro Alternative versus 7,462 sorties per year under the NAS Lemoore Alternative). Flights from NAF El Centro to the R-2508 Complex would enter the R-2508 Complex from the south and thus would not cross national park and wilderness areas near the Swoop and Kiote access points. Because terrain elevations between NAF El Centro and the R-2508 Complex are lower than those between NAS Lemoore and the R-2508 Complex, noise impacts along the access corridors would be less than those discussed for the NAS Lemoore Alternative.

During Phase 2 of the NAF El Centro Alternative, six F/A-18C/D squadrons currently based at NAS Lemoore would be changed to F/A-18E/F squadrons based at NAF El Centro. Because squadrons based at NAF El Centro would make less use of the R-2508 Complex than those based at NAS Lemoore, total F/A-18 aircraft flights to and from the R-2508 Complex would drop to less than 1997 levels, with 3,095 sorties per year entering R-2508 via the Swoop and Kiote access points and 5,916 sorties per year accessing the R-2508 Complex from southern access points. Noise levels along the flight corridors accessing the R-2508 Complex would be less than the noise levels discussed for the Swoop and Kiote corridors under the NAS Lemoore Alternative.

The R-2508 Airspace Complex. Because squadrons based at NAF El Centro would make less frequent use of the R-2508 Complex than those based at NAS Lemoore, the NAF El Centro would result in reduced flight activity and lower noise levels in the R-2508 Complex than discussed for the NAS Lemoore Alternative. By the end of Phase 1, military aircraft operations in the R-2508 Complex would increase by 12 percent compared to 1997 levels (39,496 sorties per year under Phase 1 versus 35,276 sorties per year for 1997). This relatively small increase in flight operations would be expected to increase overall noise levels in the R-2508 Complex by less than 0.5 dBA.

Under Phase 2 of the proposed action, total military flight operations in the R-2508 Complex would decline by 12.9 percent compared to Phase 1 conditions and by 2.5 percent compared to 1997 conditions (34,387 sorties per year at the end of Phase 2 versus 39,496 sorties per year at the end of Phase 1 and 35,276 sorties per year for 1997). Overall noise levels within the R-2508 Complex would be about the same as current noise levels.

Military training routes. Use of the VR-1257 corridor under the NAF El Centro Alternative is assumed to be the same as discussed for the NAS Lemoore Alternative.

4.8 BIOLOGICAL RESOURCES

This section identifies potential consequences to biological resources from implementing the proposed action at one of the alternative bases. Projected conditions resulting from the proposed action are compared to existing biological resources described in Section 3.8, Biological Resources.

Significance Criteria

Resources considered sensitive by federal, state, or local agencies for each base are the focus of this assessment. Implementing the proposed action would have a significant impact if it would:

- Substantially affect species (or their habitat) listed as threatened or endangered by state or federal resource agencies and other species specifically protected by applicable laws; or
- Substantially affect species and/or habitats, including those that are restricted at a regional scale, habitats that serve as concentrated breeding or foraging areas and are limited in availability, or habitats that support substantial concentrations of one or more special status species.

Table 4-28 summarizes the potential impacts to biological resources identified in this analysis.

Table 4-28
Summary of Biological Resources Impacts

IMPACT ISSUES	NAS Lemoore	NAF El Centro
Jurisdictional wetlands	○	○
Special status species	◐	◑
Vegetation and wildlife	◐	◐

LEGEND:
● = Significant and not mitigable impact
◑ = Significant but mitigable impact
◐ = Less than significant impact
○ = No impact

4.8.1 NAS Lemoore Alternative

All proposed construction within NAS Lemoore would occur in areas of current development or disturbed landscaped areas. In the operations area the FRS hangar, fleet hangar, airframe shop, and engine maintenance shop all would be located in areas that are developed. The proposed strike fighter weapons school and aviation armament shop would be located in areas of disturbed grasslands frequently mowed or plowed. In the administration area all of the proposed construction projects would occur on disturbed grassland or landscaped areas.

Therefore, none of the proposed facilities would significantly affect biological resources.

Less than Significant Impacts

Jurisdictional wetlands. There would be no impacts to jurisdictional wetlands due to construction or expansion of the proposed facilities. Three wetlands occur near the operations area of NAS Lemoore site, but none are in or directly adjacent to proposed project locations. No wetlands occur within the Administration/ Housing area of NAS Lemoore, so there would be no impacts from the proposed action. No mitigation would be required.

Special status species. There would be no impacts to special status species from construction or expansion of the proposed facilities on NAS Lemoore. Little native habitat exists and few special status plants or animals occur on NAS Lemoore. No special status plants or animals have been documented within the proposed project sites on NAS Lemoore.

Aircraft on training operations in the R-2508 Complex may pass over habitat for the California (Sierra Nevada) bighorn sheep and in VR-1257 may pass over habitat for Peninsular bighorn sheep in the Anza-Borrego Desert State Park. In a study monitoring noise impacts to the biota of Nevada from NAS Fallon operations, observers noted that during 16 overflights (2 above the speed of sound, 8 low-level, and 6 high-level), bighorn sheep showed no reaction or minor reactions to all overflights but one. Seventy-two percent of mountain sheep exposed to aircraft disturbances showed no reaction, and 24 percent showed minor reactions. These findings were based on observations of free-ranging wildlife during actual military overflights (Nevada Department of Wildlife 1989).

The Air Force also commissioned a study to examine the physiological responses of pronghorn sheep, bighorn sheep, and elk to a variety of visual and auditory stimuli at Hill Air Force Base in Utah. This study monitored heart rate and body temperature responses and found that two consecutive sonic booms elicited responses that were of short duration. Decreased responses to subsequent sonic booms indicated rapid habituation to this disturbance. Heart rate response to subsonic F-16 flyovers was both minimal and of short duration. Responses to aircraft were transient and of short duration (Workman et al. 1992).

A third series of studies on the effect of noise on ungulates found that aircraft overflights did not have a detrimental influence on heart rate in mule deer and bighorn sheep. In the initial study, desert mule deer and bighorn sheep were exposed to simulated low-altitude jet aircraft noise. Heart rate, body temperature, and behavior were monitored and compared for periods before, during, and after the simulated overflights. Heart rates increased during overflights, sometimes more than doubling, but returned to resting rates in two minutes or less. As the study progressed, all animals became habituated to the sounds, and both the rate and degree of increase in heart rate decreased. At the end of the study, mean heart

rate changes were within normal expectations for seasonal changes (Krausman et al. 1993a).

The same study organizers installed heart-rate monitors on bighorn sheep in a 791-acre (320-hectare) desert enclosure. Heart rates and behavior were monitored before, during, and after low-level overflights by F-16 aircraft. Again, heart rates returned to pre-exposure levels in less than two minutes and behavioral alterations were not long-lasting. Although the sheep often ran during noise exposure, they typically resumed normal activities after traveling less than 30 feet (10 meters) (Krausman et al. 1993b and c).

It is possible that overflights of lambing areas could occur in any given year. Lambing can take place anywhere in the park where suitable conditions exist. In addition, lambing areas may change from year to year depending on disturbance, weather, availability of feed, and predation. Given this variability, it is not possible to predict flights over lambing areas from year-to-year.

Based on these studies, the small number of flights that would be added to VR-1257 by the proposed action (approximately one per week), and the altitude of aircraft operating within R-2508, it is not anticipated that a significant impact to Peninsular or California bighorn sheep would occur. No mitigation would be required, however, to minimize the potential for impacts the Navy will continue to educate new pilots as to the valuable resources present in these areas and to stress the importance of staying at least 3,000 feet (914 m) AGL above national park and wilderness areas and as close as possible to the VR-1257 flight path.

Vegetation and wildlife. There would be no significant impacts to vegetation and wildlife from proposed construction or expansion of the facilities. Approximately 52 acres (21 ha) of disturbed/ruderal habitat and landscaped area used by species commonly found in urban environments would be removed. The removal would not substantially reduce landscaped areas at the base. It is further anticipated that additional landscaping would be developed with construction. Development and operations in support of the proposed action at NAS Lemoore would have a less than significant impact on birds protected under the federal Migratory Bird Treaty Act. No mitigation would be required.

4.8.2 NAF El Centro Alternative

All proposed construction in the administration area would occur in areas that are currently developed, disturbed, or landscaped, with the exception of the family housing, which is proposed on agricultural outlease lands. No special status plant or animal species have been documented at any of these proposed sites (Collins 1997).

In the operations area the airframe shop, engine maintenance shop, engine test cell, avionics shop and aviation armament shop are proposed for sites that are currently paved. The rest of the facilities proposed for the operations area are on agricultural

outlease lands or disturbed areas. The parallel runway and taxiway, maintenance hangar (FRS), maintenance hanger (four fleet squadrons), aviation life support system shop, battery shop, and external fuel tank storage are proposed for disturbed grassland sites, a portion of which is used by western burrowing owls, a federal and state species of concern.

Significant Impacts

Impact 1. Special status species. A significant but mitigable impact would occur to the western burrowing owl, a California and federal species of concern, at NAF El Centro. Western burrowing owls were observed during a July 29, 1997 site visit at the intersection of taxiway D and taxiway E, and at an area north of the main runway. These areas are adjacent to the proposed site for construction of the maintenance hangar (FRS), maintenance hangar (fleet squadrons), aviation life support system shop, battery shops, and parallel runway and associated taxiway. Increased activity may cause western burrowing owl to abandon these areas.

Mitigation 1. To avoid impacts to western burrowing owls, conduct a pre-construction survey within the disturbed habitat to ensure that no burrowing owls are nesting in the area and to determine if the site is burrowing owl habitat. If owls are nesting, move the nests to a new area with artificial nest burrows in place. Implementing these mitigation measures would reduce the impact to a less than significant level. No Section 7 consultation would be required under the Endangered Species Act.

Less than Significant Impacts

Jurisdictional wetlands. There would be no impacts to jurisdictional wetlands from constructing or expanding the proposed facilities. Wetlands at NAF El Centro are located over 4,000 feet (1,218 m) north of the construction sites. No mitigation would be required.

Special status species. As discussed above for NAS Lemoore, studies indicate that no significant impacts to Peninsular or California bighorn sheep would be expected from training flights to or within the R-2508 Complex or along VR-1257. In addition, there would be no impacts to the Peninsular bighorn sheep from operations within the airspace of NAF El Centro. Although the western MOA of NAF El Centro (Figure 3-12) does include the extreme eastern portion of the Anza-Borrego Desert State Park, it is outside the area used by Peninsular bighorn sheep. It is not anticipated that activities within this MOA would increase noise levels in the peninsular Mountain Range areas used by bighorn sheep. No significant impact would be expected.

If the NAF El Centro alternative is selected, the Navy would comply with the biological opinion for Desert Pronghorn 2-21-96-F-094, dated August 27, 1997 for operations within the Barry M. Goldwater training range. No mitigation is required.

Although potential habitat for the Yuma clapper rail was identified in the northwestern corner of NAF El Centro, no individuals were seen during a 1996 survey performed for the Integrated Natural Resource Management Plan. In addition, no suitable habitat is found in off-base training areas. Noise impacts to potential off-base habitat for the Yuma clapper rail would not be significantly impacted by the proposed action. No significant impact would occur to Yuma clapper rail and no mitigation would be required.

The flat-tailed horned lizard has not been identified on the NAF El Centro base itself but has been found in the western MOA of NAF El Centro. Potential impacts to the flat-tailed horned lizard from training activities in the R-2510 and R-2512 ranges of NAF El Centro are described in a 1996 range-wide management strategy, a 1997 biological assessment, and a signed conservation agreement. All activities associated with these ranges would be conducted consistent with the conservation agreement, and no significant impact would be expected.

Vegetation and wildlife. Approximately 2.1 acres (0.9 ha) of disturbed/ruderal habitat and 80 acres (32.4 ha) of agricultural habitat would be removed by constructing or expanding the proposed facilities. This vegetation is used by species commonly found in urban environments. Because of the abundance of suitable landscaped areas on the nearby developed portions of the base, the additional landscaping that would be associated with construction, and the abundance of nearby agricultural lands and open space, this impact is considered less than significant. Potential impacts to birds protected by the Migratory Bird Treaty Act would be similar to impacts discussed for the NAS Lemoore Alternative. No mitigation would be required.

4.9 HYDROLOGY AND SURFACE WATER QUALITY

This section identifies potential impacts to hydrology and surface water quality that may result from implementing the proposed action at NAS Lemoore and NAF El Centro. The impact analysis compares projected future conditions to the existing resources in the affected area.

Significance Criteria

Water quality involves the chemical and physical composition of water as affected by natural conditions and human activities. For this analysis, surface water quality is evaluated with respect to implementing the proposed action.

Implementing the proposed action would have a significant hydrology/surface water quality impact if it would result in the following:

- Increase flooding on- or off-site or subject project components to the 100-year recurrence flood;
- Increase runoff so as to exceed existing storm drainage capacity;
- Substantially degrade the quality of surface water or ground water; or
- Substantially reduce availability of surface water or ground water.

Table 4-29 summarizes the potential impacts to hydrology and surface water quality that have been identified in this analysis.

Table 4-29
Summary of Hydrology and Surface Water Quality Impacts

Impact Issues	NAS Lemoore	NAF El Centro
Exposure to flood hazards	○	◐
Exceedance of stormwater drainage capacity	◐	◐
Surface water quality degradation	◐	◐
Reduce surface or ground water availability	◐	◐

LEGEND:
● = Significant and not mitigable impact
◑ = Significant but mitigable impact
◐ = Less than significant impact
○ = No impact

4.9.1 NAS Lemoore Alternative

Less than Significant Impacts

Exposure to flood hazards. The proposed facilities would not be located in areas of the site subject to flooding and would therefore not be exposed to this hazard. No impact would occur and no mitigation would be required.

Exceedance of stormwater drainage capacity. Increased impermeable surface area due to construction in unpaved areas could increase the volume of water flowing into existing stormwater conveyances. The Navy will design new stormwater conveyances and will upgrade existing conveyances as necessary to adequately convey peak stormwater flows. No mitigation would be required.

Surface water quality degradation. Proposed construction would result in less than significant impacts to surface water quality. Site preparation for construction of the facilities needed at NAS Lemoore could increase erosion and the potential for stormwater runoff to mobilize existing soil contaminants, if present, or contaminants resulting from accidental spills during construction. After construction, the potential for nonpoint source discharges or spills from industrial sites and parking areas could increase due to more intensive use of the sites. The Navy will comply with requirements of the Clean Water Act (CWA) that prohibit nonpoint source discharges of pollutants and sediments. Construction will be performed in compliance with California's General Construction Stormwater Permit. The new project sites will be included in the installation's stormwater pollution prevention plan (SWPPP) in compliance with the state's General Industrial Stormwater Permit. A small increase in total loading of petroleum hydrocarbons in storm runoff may occur from increased parking areas and roads; however, the change would be less than significant relative to existing loading at the current level of development. No mitigation would be required.

Reduce surface or ground water availability. Proposed construction would result in less than significant impacts to surface water and ground water availability. The increased population and operations at NAS Lemoore would increase demand for potable water by approximately 150 million gallons per year (mgy) (580 million liters per year [mly]) or approximately 460 acre feet per year (see Section 4.10, Utilities and Services, for a detailed discussion of water supply). NAS Lemoore would meet this demand by reapportioning its existing water allocation from the Westlands Water District. NAS Lemoore would reassign 1,000 acre-feet of its allocation from the Westlands Water District from agricultural uses on the base to municipal and industrial uses. Reallocation of existing water would not cause a reduction in surface water availability, and, although it could cause agricultural producers to shift to ground water, the increase would not substantially reduce ground water availability.

4.9.2 NAF El Centro Alternative

Less than Significant Impacts

Exposure to flood hazards. Proposed development would result in a less than significant flooding impact. The child development center would be constructed on land that is currently unpaved open space. This would only marginally increase the impervious surface area of the installation and would not significantly increase the potential for flooding. No proposed facilities would be located in flood hazard areas. No mitigation would be required.

Exceedance of stormwater drainage capacity. Increased impermeable surface area due to construction in unpaved areas could increase the volume of water flowing into existing stormwater conveyances. The Navy will design new stormwater conveyances and will upgrade existing conveyances as necessary to adequately convey peak stormwater flows. No mitigation would be required.

Surface water quality degradation. Proposed construction would result in less than significant impacts to surface water quality. Constructing and operating the new project facilities, particularly the runway, will increase the potential for nonpoint source discharges of pollutants. The Navy will comply with provisions of the CWA and will incorporate the sites into the installation's SWPPP. No mitigation would be required.

Reduce surface or ground water availability. Proposed construction would result in less than significant impacts to surface and ground water availability. The increased population and operations at NAF El Centro would increase total demand for potable water by approximately 280 mgy (1,095 mly), or approximately 879 acre-feet (see Section 4.10, Utilities and Services, for a detailed discussion of water supply). The Imperial Irrigation District (IID) has sufficient capacity to serve the base's increased water needs (Garcia 1997). The increase in water demand from the proposed project at NAF El Centro would not cause a reduction in surface or ground water availability.

4.10 UTILITIES AND SERVICES

This section identifies potential impacts to utilities and services that may result from implementing the proposed action at NAS Lemoore and NAF El Centro. The impact analysis compares projected conditions to the affected environments and areas of influence described in Section 3.10, Utilities and Services.

Significance Criteria

An alternative may have significant impacts on a utility or service if it would result in the following:

- Increase demand in excess of the utility system or service capacity to the point that substantial expansion, additional facilities, or increased staffing levels would be necessary; or
- Violate federal, state, or local standards or requirements regulating a public utility system.

Table 4-30 summarizes the potential impacts to utilities and services that have been identified in this analysis.

Table 4-30
Summary of Utilities and Services Impacts

Impact Issues	NAS Lemoore	NAF El Centro
Water supply	◐	◐
Wastewater collection and treatment	◐	◐
Stormwater collection and treatment	◐	◐
Solid waste collection and disposal	◐	◐
Natural gas and electric services	◐	◐
Child care services	◐	◐
Health services	◐	◐
Police services	◐	◐
Fire services	◐	◐

LEGEND:
● = Significant and not mitigable impact
◑ = Significant but mitigable impact
◐ = Less than significant impact
○ = No impact

Analysis Approach

For this analysis, utility demand projections for each facility are based on an ICF Kaiser study that determined utility usage associated with the 1993 Defense Base Closure and Realignment Commission (BRAC) recommendations (US Navy 1994f). Utility usage by family members housed on each facility also was incorporated into the utility demand projections. Based on these assumptions, projected utility demand at each Navy facility from realigning F/A-18 aircraft, associated personnel, and equipment are presented in Table 4-31.

Table 4-31
Summary of Utilities Demand

Utility System	NAS Lemoore	NAF El Centro
Water supply	420,000 gallons per day (gpd) (1.6 million liters per day [mld])	785,000 gpd (3.0 mld)
Wastewater collection and treatment	340,000 gpd (1.3 mld)	630,000 gpd (2.4 mld)
Solid waste collection and disposal	8.7 tons (7.8 tonnes) per day	16.1 (14.5 tonnes) tons per day
Natural gas	75,000 cubic feet per day (cfd) (2,000 cubic meters per day [cmd])	140,000 cfd (40,000 cmd)
Electricity	110,000 Kilowatt-hours (KWH) per day	200,000 KWH per day

Families that would not reside at Navy facilities were assumed to be distributed in surrounding communities and therefore would affect local provider utility demand. Additionally, these off-base residents are projected to be absorbed by existing housing and development (see Section 4.3, Socioeconomics).

Projected demands for public services are based on population increases, including military and civilian personnel and their families. All personnel are assumed to use health services and recreation and community facilities in the project area for each alternative. In the case of fire protection and police services, the additional personnel and family members that would work and reside at a Navy facility would generate the increased demand at the base. Families that would reside in surrounding areas would require fire protection and police services from local providers. Similar to utilities, services for off-base residents are projected to be absorbed by existing housing and development (see Section 4.3, Socioeconomics).

4.10.1 NAS Lemoore Alternative

Less than Significant Impacts

Water supply. A less than significant impact to NAS Lemoore's water supply and distribution system would result from the proposed action. The increased demand for water would not significantly affect the water supply system at NAS Lemoore. The increased population and operations at NAS Lemoore would increase demand for potable water by approximately 420,000 gpd (1.6 mld) or 150 mgy (580 mly), a 15 percent increase over the current usage of 2.6 mgd (9.8 mld) or 945 mgy (3,600 mly). The base's total water demand of about 3.02 mgd (11.4 mld) or 1,095 mgy (4,100 mly) would exceed its contract with the Westlands Water District for 977 mgy (3,700 mly) by 118 mgy (450 mly). The existing water supply system at NAS Lemoore has a total capacity of approximately 7.5 mgd (28.4 mld) and could accommodate the increase in water required.

To accommodate this increased demand, NAS Lemoore would reapportion its existing water allocation from the Westlands Water District. NAS Lemoore would reassign 1,000 acre-feet of its allocation from the Westlands Water District from agricultural uses on the base to municipal and industrial uses. On-base agricultural uses historically have been allocated approximately 32,500 acre-feet of water per year. The 1,000 acre-foot decrease in water supply would not significantly affect on-base agricultural land use.

Additionally, water consumption at the base could be reduced through water conservation techniques, such as using low-flow bathroom fixtures and recycling gray water for nonpotable uses. Agricultural land also could be retired, and water could be transferred for use in nonagricultural sectors.

Families that would reside in the surrounding communities of Lemoore and Hanford would require approximately 310,000 gpd (1.2mld) or 110 mgy (420 mly) of water. These areas receive water from other local water suppliers that have the capacity to accommodate the water requirements (Pereira 1997, Haley 1997).

Wastewater collection and treatment. A less than significant impact to wastewater collection and treatment would result from the proposed action. The increased wastewater generation would not significantly affect the existing wastewater infrastructure at NAS Lemoore. The population and operations increase at NAS Lemoore would increase total wastewater generated at the base by approximately 340,000 gpd (1.3 mld) to approximately 2.04 mgd (7.7 mld), a 20 percent increase over the current average generation of 1.7 mgd (6.4 mld). This amount would not exceed the base's 2.12-mgd (8-mld) average flow capacity.

The families that would reside in the surrounding communities within the affected area would generate approximately 250,000 gpd (950,000 liters per day [lpd]) of wastewater. Wastewater treatment agencies in the surrounding cities of Lemoore and Hanford have sufficient capacity to accommodate the wastewater of the incoming families (Pereira 1997, Sisneroz 1997). No mitigation would be required.

Stormwater collection and treatment. A less than significant impact to stormwater collection and treatment would result from the proposed action. The increase in stormwater generated at NAS Lemoore from this alternative would not significantly affect the stormwater infrastructure. The volume and rate of stormwater runoff would increase slightly at NAS Lemoore because impermeable surfaces would increase by approximately 46 acres (18.7 ha) from the proposed development and expansion of current facilities. The stormwater collection system is in good condition and can withstand most storm events. The infrastructure has the capacity to accommodate the construction and development (Stewart 1997). In addition, minor upgrades that are required as part of the proposed project (OPNAVINST 11010.20) would help accommodate the projected increase in stormwater flows as buildout of the alternative progresses.

Solid waste collection and disposal. A less than significant impact to solid waste collection and disposal would result from the proposed action. The increase in solid waste generation at NAS Lemoore from this alternative would not significantly affect the collection and disposal system. The population and operations increases at NAS Lemoore would increase total solid waste generation by 8.7 tons (7.8 tonnes) to approximately 20.7 tons (18.6 tonnes) per day, a 65 percent increase over the current generation of 12 tons (11 tonnes) per day. The current private solid waste collector could accommodate the total waste generated (Stewart 1997). The landfills that receive the solid waste generated at the base could accommodate the increase. Later this year, the Kings County Waste Management Authority will transport solid waste to Chemical Waste Management's landfill which has the capacity to accommodate solid waste for the next 25 years (Adams 1998).a The city of Avenal's landfill is scheduled for closure in 2012; however, the city is expanding its industrial disposal facilities to extend the lifespan of the landfill by another 40 years (Watson 1997). Additionally, the recycling programs at NAS Lemoore would enable the base to meet its solid waste diversion goals outlined by AB 939 (Mora 1997). A comprehensive solid waste reduction and recycling program for recyclable materials will continue to be implemented for all F/A-18E/F related military activities and personnel, as required by AB 939 and OPNAVISNT 5090.1B.

The families that would reside in the surrounding communities within the affected area would generate approximately 0.6 tons (0.5 tonnes) per day of solid waste. Local waste collection and disposal agencies could accommodate the solid waste that would be generated (Adams 1997, Watson 1997). No mitigation would be required.

Natural gas and electric services. A less than significant impact to natural gas and electric services would result from the proposed action. The increase in natural gas and electric consumption at NAS Lemoore from this alternative would not significantly affect the gas and electric systems. The population and operations increase at NAS Lemoore would increase total natural gas consumption by 75,000 cfd (2,000 cmd) to approximately 805,000 cfd (23,000 cmd), a 10 percent increase over the current demand of 730,000 cfd (20,400 cmd). Electricity requirements would increase by approximately 110,000 KWH to about 329,000 KWH per day, a 50 percent increase over the current demand of 219,000 KWH. The base's natural gas and electric systems are in adequate condition and have the capacity to accept the additional natural gas and electricity needed (Stewart 1997). Southern California Gas Company (SCGC) has the capacity to provide the base with the additional natural gas (Rees 1997). The 18.0 megawatts (MW) of electrical power from the Western Area Power Administration (WAPA) would remain the same, and the increased electricity required would be acquired from Pacific Gas and Electric Company (PG&E). PG&E has the capacity to provide the additional required electricity to the base (Raiskup 1997).

The additional families that would reside in the surrounding communities within the affected area also would receive energy from SCGC and PG&E. These providers have the capacity to supply the required natural gas and electricity to these areas (Rees 1997, Raiskup 1997). No mitigation would be required.

Child care services. The increased number of children at NAS Lemoore from this alternative could not be accommodated by the existing child care facilities; however, the proposed project includes constructing a child development center to accommodate the additional children. This impact would not be significant.

Health services. A less than significant impact to health services would result from the proposed action. The additional personnel at NAS Lemoore from the F/A-18 squadron realignment would not significantly affect health services. The NAS Lemoore hospital could provide a wide range of health care, including emergency services, to all members of the F/A-18 community. Additionally, the hospital is scheduled for expansion, with construction to be completed by mid-1999 (Crosby 1997).

The three surrounding area hospitals also would accommodate the demand for health services from military family members residing in surrounding communities. Demand for healthcare would be distributed among these facilities. No mitigation is required.

Police services. A less than significant impact would occur at NAS Lemoore to on-base police services. The additional demand for police services at NAS Lemoore from this alternative would not significantly affect the NAS Lemoore Security Department. The current staffing levels, facilities, and equipment could accommodate the increased police services requirements of the increased operations and personnel and maintain the existing level of service.

The Kings County Sheriff's Department and police departments in the surrounding cities of Lemoore and Hanford have sufficient capacity to accommodate the security requirements of the incoming families that would reside off-base (Landis 1997, Carden 1997, Scott 1997). Demand for police services off-base would be distributed among these local agencies. No mitigation would be required.

Fire services. A less than significant impact would occur to on-base fire services at NAS Lemoore. The additional demand for fire services at NAS Lemoore from this alternative would not significantly affect the NAS Lemoore Fire Department. The current staffing levels, facilities, and equipment could accommodate the increased fire protection requirements of the increased operations and personnel and maintain the existing level of service.

The Kings County Fire Department and fire departments in the surrounding cities of Lemoore and Hanford have sufficient capacity to accommodate the fire

protection requirements of the incoming families that would reside in the surrounding communities (Chesmore 1997, Machado 1997, Ieronimo 1997). Demand for off-base fire protection would be distributed among these local agencies. No mitigation would be required.

4.10.2 NAF El Centro Alternative

Less than Significant Impacts

Water supply. A less than significant impact to water resources would result from the proposed action. The increased demand for water would not significantly affect the water supply of NAF El Centro. The increased population and operations at NAF El Centro would increase total demand for potable water by approximately 785,000 gpd (3.0 mld) to 1.4 mgd (5.3 mld), a 120 percent increase from the current consumption of 650,000 gpd (250,000 lpd). The infrastructure at NAF El Centro is in adequate condition and has the capacity to accommodate the increase (Weller 1997). IID also has sufficient capacity to serve the base's increased water needs (Garcia 1997).

The families that would reside in the surrounding communities within the affected area would require approximately 515,000 gpd (1.9 mld) of potable water, and IID has the capacity to accommodate their requirements. No mitigation would be required.

Wastewater treatment and collection. A less than significant impact would occur at NAF El Centro to wastewater treatment and collection services. The population and operations increase at NAF El Centro would increase wastewater generated at the base by approximately 630,000 gpd (2.4 mld) to about 760,000 gpd (2.9 mld), a 580 percent increase over the current usage of 130,000 gpd (490,000 lpd). The total average wastewater generated would exceed the base's wastewater treatment plant capacity of 300,000 gpd (1.14 mld). The wastewater system would require a second wastewater treatment plant, consisting of an oxidation ditch, a secondary clarifier, and sludge drying beds to expand wastewater capacity to accommodate at least a total average wastewater flow of 760,000 gpd (2.9 mld) (Flowers 1997). Additionally, the amount of discharge allowed into the New River by the base's National Pollutant Discharge Elimination System (NPDES) permit (300,000 gpd [1.14 mld]) would be exceeded.

The Navy, as part of the proposed project (ONAVINST 11010.20), is required to expand the capacity of the wastewater system at NAF El Centro by upgrading the existing systems to accommodate the increased wastewater flow. The Navy also will apply to the RWQCB for an increase in the allowable wastewater flow into the New River regulated by its NPDES permit. These system upgrades would ensure adequate capacity for wastewater increases on-base.

The families that would reside in the surrounding communities within the ROI would generate about 410,000 gpd or (1.6 mld). Local wastewater agencies in El

Centro, Brawley, and Holtville have sufficient capacity to accommodate the increased wastewater requirements of the incoming families (Hines 1997, Smith 1997, Garcia 1997).

Stormwater collection and treatment. A less than significant impact to stormwater collection and treatment would result from the proposed action. The increase in stormwater generated at NAF El Centro from this alternative would not significantly affect the stormwater infrastructure. The volume and rate of stormwater runoff would increase slightly because impermeable surfaces would increase by approximately 86 acres (34.9 ha) from the proposed development and expansion of current facilities at NAF El Centro. The stormwater collection system is in adequate condition and has the capacity to accommodate the increase in stormwater flow due to development and expansion (Flowers 1997). In addition, minor upgrades that are required as part of the proposed project (OPNAVISNT 11010.20) would help accommodate the projected increase in stormwater flows during buildout of this alternative.

Solid waste collection and disposal. A less than significant impact to solid waste collection and disposal would result from the proposed action. The increase in solid waste generation at NAF El Centro from this alternative would not significantly affect the collection and disposal system. The population and operations increase at NAF El Centro would increase total solid waste generation at the base by approximately 16.1 tons (14.5 tonnes) per day to 19.1 tons (17.2 tonnes) per day, a 540 percent increase over the current generation of 3 tons (2.7 tonnes) per day. Imperial County Sanitation (ICS) has the capacity to transport the solid waste generated, and its landfill is expected to remain open until 2016 (Lau 1997). Additionally, the pollution prevention management program would be able to meet its solid waste diversion goals outlined by AB 939 (Curiel 1997). A comprehensive solid waste reduction and recycling program for recyclable materials will continue to be implemented for all F/A-18E/F-related military activities and personnel, as required by AB 939 and OPNAVISNT 5090.1B.

The families that would reside in the surrounding communities would generate approximately 4.0 tons (3.6 tonnes) per day of solid waste, and ICS also has the capacity to transport and dispose of the solid waste generated in these areas (Lau 1997). No mitigation would be required.

Natural gas and electric services. A less than significant impact would occur at NAF El Centro to its natural gas and electric services infrastructure. The population and operations increases at NAF El Centro would increase total natural gas consumption by approximately 140,000 cfd (40,000 cmd) to about 145,000 cmd (4,100 cmd), a 2,900 percent increase over the current demand of 5,034 cfd (468 cmd). Total electricity requirements would increase by 200,000 KWH per day to 250,000 KWH per day, a 400 percent increase over the current usage of 50,000 KWH per day. These increases would exceed the capacities of the existing infrastructure and would require structural upgrades for both the natural gas and

electricity distribution systems (Kear 1997). The natural gas system would require enlarging the central gas main from 3 inches (7.6 centimeters [cm]) to 4 inches (10.2 cm), and enlarging all peripheral laterals to 2 inches (5.1 cm) (Kear 1997). The electrical system would require upgrades of approximately 15 transformers to 50 KVA, new transmission lines, and new switchgear (Kear 1997).

The Navy will appropriate funding to expand the capacity of the natural gas and electrical systems at NAF El Centro by upgrading the existing systems to accommodate the increased energy demands. These system upgrades would ensure adequate natural gas and electricity for the additional operations, personnel, and family members on-base.

SCGC has the capacity to provide the base with the additional natural gas for both the base and for families that would reside in the surrounding communities (Rees 1997). IID, Arizona Public Service, and El Paso Electricity have the capacity to provide the additional electricity required by the base and the families residing off base (Coltrane 1997).

Health services. A less than significant impact to health services would result from the proposed action. The additional personnel at NAF El Centro from the E-2 squadron realignment would not significantly affect health services. The on-base medical facilities at NAF El Centro and at Balboa Naval Hospital in San Diego have the capacity to accommodate the increase in personnel and family members (Rodriguez 1997, Leonard 1997). Also, the three surrounding area hospitals would accommodate the additional demand for health services from military family members residing in surrounding communities. Demand for healthcare would be distributed among these facilities. No mitigation would be required.

Child care services. The increased number of children at NAF El Centro from this alternative could not be accommodated by the existing child care facilities; however, expanding the Family Services Center, which is part of the proposed project, would accommodate the additional children. This impact would not be significant.

Police services. A less than significant impact to police services would result from the proposed action. The additional demand for police services at NAF El Centro from this alternative would not significantly affect the NAF El Centro Security Department. The current staffing levels, facilities, and equipment could accommodate the increased police services requirements of the increased operations and personnel and maintain the existing level of service (Stammreich 1997).

The families that would reside in the surrounding communities within the affected area would require police services. The Imperial County Sheriff's Department and police departments in the surrounding cities of El Centro, Holtville, and Brawley have sufficient capacity to accommodate the security requirements of the

incoming families (Hackett 1997, Townsel 1997, Jordan 1997, Graham 1997). Demand for police services would be distributed among these local agencies. No mitigation would be required.

Fire services. A less than significant impact to fire services would result from the proposed action. The additional demand for fire services at NAF El Centro from this alternative would not significantly affect the NAF El Centro Fire Department. The current staffing levels, facilities, and equipment could accommodate the increased fire protection requirements of the increased operations and personnel and maintain the existing level of service (Zurn 1997).

The families that would reside in the surrounding communities within the affected area would require fire protection. The Imperial County Fire Department and fire departments in the surrounding cities of El Centro, Holtville, and Brawley have sufficient capacity to accommodate the fire protection requirements of the incoming families (Nippins 1997, DuBois 1997, Gronstedt 1997, Zendejas 1997). Demand for fire protection would be distributed among these local agencies. No mitigation would be required.

4.11 PUBLIC HEALTH AND SAFETY

This section identifies potential impacts to public health and safety that may result from implementing the proposed action at NAS Lemoore and NAF El Centro. The impact analysis compares projected conditions to the affected environments and areas of influence. The alternative bases were evaluated for impacts to airspace safety, explosives safety, and electromagnetic radiation.

Significance Criteria

A project would have a significant impact to public health and safety if it would result in the following:

- Increase hazards to airspace safety according to air traffic control specialists; or
- Substantially increase hazards related to accident potential zones, explosives safety, and electromagnetic radiation beyond existing levels.

Table 4-32 summarizes the potential impacts to public health and safety that have been identified in this analysis.

Table 4-32
Summary of Public Health and Safety Impacts

Impact Issues	NAS Lemoore	NAF El Centro
Airspace safety	◐	◐
Explosive safety quantity distances	◐	◐
Electromagnetic radiation	○	○

LEGEND:
● = Significant and not mitigable impact
◑ = Significant but mitigable impact
◐ = Less than significant impact
○ = No impact

4.11.1 NAS Lemoore Alternative

Less than Significant Impacts

Airspace safety. The increase in number of flights at NAS Lemoore from the additional F/A-18E/F aircraft would not significantly affect flight operations. The addition of the F/A-18E/F aircraft would increase airfield use as well as flight operations in the airspace above the airfield by approximately 70 percent. Consultation with an air traffic control specialist at NAS Lemoore indicates that this could be accommodated within established operational procedures and flight patterns (Vaughan 1997). No changes in airfield operations or airspace designations would be necessary to operate and train the F/A-18E/F aircraft squadrons. There would be no significant impacts to public health and safety from airspace operations. No mitigation would be required.

Explosive safety quantity distances. No inhabited buildings are within the NAS Lemoore explosive safety quantity distance (ESQD) arcs. No aircraft or related facilities, other than the FRS and fleet hangar, would be within an ESQD arc. There would be no impact to public health and safety from ESQD arcs, and no mitigation would be required.

Electromagnetic radiation. None of the proposed project locations would be within an NAS Lemoore electromagnetic radiation (EMR) arc. There would be no impact, and no mitigation would be required.

4.11.2 NAF El Centro Alternative

Less than Significant Impacts

Airspace safety. The increase in numbers of flights at NAF El Centro from the additional F/A-18E/F aircraft would not significantly affect flight operations. The addition of the F/A-18E/F aircraft would increase airfield use and flight operations in the airspace above the airfield by approximately 60 percent. It is anticipated that increased air operations could be accommodated within established operational procedures and flight patterns. No changes in airfield operations or airspace designations would be necessary to operate and train the F/A-18E/F aircraft squadrons. There would be no significant impacts to public health and safety from airspace operations. No mitigation would be required.

Explosive safety quantity distances. No aircraft or related facilities, other than a portion of the runway area, would be within an NAF El Centro ESQD arc. There would be no impact to public health and safety from ESQD arcs, and no mitigation would be required.

Electromagnetic radiation. No aircraft or related facilities would be within an NAF El Centro EMR arc. There would be no impact, and no mitigation would be required.

4.12 HAZARDOUS MATERIALS AND WASTE

This section identifies potential impacts from hazardous materials and waste that could be generated by operations associated with the proposed action at NAS Lemoore and NAF El Centro. The impact analysis compares projected conditions to the affected environments and affected areas. The hazardous materials and waste analysis is a qualitative evaluation of the nature and extent of change to existing storage, disposal, and transportation that would occur with the proposed action.

Significance Criteria

The significance of impacts associated with hazardous wastes and materials is based on the toxicity, transportation risk, storage risk, and method of disposal of the substance. Generally, impacts are significant if the storage, use, transportation, or disposal of hazardous materials and wastes significantly increases risks to human health or the environment.

An impact was considered significant if it would cause a violation of federal, state, or local standards or if it would result in a significant threat to persons, protected species, or ecosystems due to exposure to hazardous substances.

Table 4-33 summarizes the potential impacts from hazardous materials and wastes, which have been identified in this analysis.

Table 4-33
Summary of Hazardous Materials and Waste Impacts

Impact Issues	NAS Lemoore	NAF El Centro
Hazardous materials management	◐	◐
Hazardous waste management	◐	◐
Installation Restoration Program sites	◐	◐
Asbestos	◐	◐
Polychlorinated biphenyls	○	○
Storage tanks	◑	◑
Pesticides	○	○
Lead	◐	◐
Ordnance	◐	◐
Radon	○	○

LEGEND:
● = Significant and not mitigable impact
◑ = Significant but mitigable impact
◐ = Less than significant impact
○ = No impact

4.12.1 NAS Lemoore Alternative

Significant Impacts

Impact 1. Storage tanks. A significant but mitigable impact would occur at NAS Lemoore from storage tanks. NAS Lemoore presently has a base-wide program for jet fuel transportation and storage, as well as refueling facilities for naval aircraft

using JP-5 fuel. Based on the 19,925,957 gallons (75,419,747 liters) per year requirement for four squadrons and an FRS, the F/A-18E/F squadrons realignment would require additional fuel storage and supply. The tank capacity at NAS Lemoore is not adequate to meet current and anticipated fuel requirements for the F/A-18E/F aircraft. The existing external fuel tank storage racks are not well suited for use with the larger 480-gallon (1,817-l) versus 330-gallon (1,249-l) external fuel tanks used by the F/A-18E/F. The additional fuel storage would create the potential for exposing the public or environment to hazardous substances.

Mitigation 1. Construction of external fuel tank racks would be necessary for secure storage of the 480-gallon (1,817-l) external fuel tanks used by the F/A-18E/F. The base implements plans and programs for fuel storage, but an amendment to these plans and programs would be necessary to include this additional area. Operational requirements and services for fuel storage at the base also would be amended to include the additional area. Following the regulatory requirements for proper installation and monitoring of the additional fuel storage area will decrease the potential exposure of the public or environment to hazardous substances. Implementing this mitigation would reduce the impact to a less than significant level.

Less than Significant Impacts

Hazardous materials management. Locating the F/A-18E/F squadrons at NAS Lemoore would not significantly increase hazardous materials usage. Construction activities would be temporary, and any additional hazardous materials would be removed once the construction was complete. Aircraft operations at NAS Lemoore would not significantly increase the total amount of hazardous materials at the base and the addition of the hazardous materials used by the F/A-18 squadrons would not result in a significant increase to the total amount of hazardous materials managed at the base. No mitigation would be required.

Hazardous wastes management. Construction activities related to the proposed action at NAS Lemoore would not significantly increase hazardous waste management. Temporary hazardous waste storage areas would be designated and operated according to Resource Conservation and Recovery Act (RCRA) and state regulations. Construction activities would be temporary, and any additional hazardous wastes generated would be removed once the construction was complete. Operational activities associated with the proposed action of NAS Lemoore would not significantly affect hazardous waste management. The additional wastes generated by the F/A-18E/F squadrons would result in a less than 5 percent increase in hazardous waste generation at the base. This would not result in a significant increase in the total amount of hazardous wastes managed and disposed of from the base. No mitigation would be required.

Installation Restoration Program sites. Activities associated with implementing the proposed action at NAS Lemoore would not significantly affect Installation

Restoration Program (IRP) sites. There are no IRP sites identified within or adjacent to the proposed project locations. Operation activities for the F/A-18E/F squadrons would include managing and disposing of hazardous materials/wastes in accordance with regulations and basewide protocol. There would be no significant impacts, and no mitigation would be required.

Asbestos. Less than significant impacts related to asbestos would result from implementing the proposed action at NAS Lemoore. Asbestos-containing material (ACM) encountered during construction activities would be properly abated. Operations would not require using asbestos in construction. No mitigation would be required.

Polychlorinated biphenyls. Polychlorinated biphenyls (PCBs) are not present at any of the sites proposed for construction, and no new PCB-containing equipment would be installed as part of the F/A-18E/F squadrons realignment. There would be no impact from PCBs and no mitigation would be required.

Pesticides. Less than significant impacts associated with pesticides would result from implementing the proposed action at NAS Lemoore. Although pesticide use may increase incrementally under the proposed action, all pesticide use would be implemented under the base's pesticide management plan. No mitigation would be required.

Lead. Less than significant impacts associated with lead would result from the proposed action at NAS Lemoore. Construction and expansion activities in support of the proposed action could occur in buildings containing lead. If lead-based paint (LBP) is suspected in a building due to its age (built prior to 1978), proper cautionary and abatement procedures should be implemented when renovations are conducted. Operational activities associated with the F/A-18 squadrons' realignment to NAS Lemoore would not involve the use of lead. No mitigation would be required.

Ordnance. Less than significant impacts associated with ordnance would occur from implementing the proposed action at NAS Lemoore. Construction activities associated with the proposed action would not occur in areas containing ordnance. No ordnance manufacture, handling, storage, or disposal activities would occur during implementation of the proposed action. No mitigation would be required.

Radon. No significant impacts associated with radon would result from implementing the proposed action at NAS Lemoore. No radon hazards have been identified at any of the proposed project locations. No mitigation would be required.

4.12.2 NAF El Centro Alternative

Significant Impacts

Impact 1. Storage tanks. A significant but mitigable impact would occur at NAF El Centro from storage tanks. Construction of an aircraft direct fueling station may be necessary to accommodate the 33,301,139 gallons (126,058,130-l) per year requirement for ten F/A-18E/F squadrons and one FRS. The existing external fuel tank storage racks are not well suited for use with the larger 480-gallon (1,817-l) versus 330-gallon (1,249-l) external fuel tanks used by the F/A-18E/F. The additional fuel storage would create the potential for exposing the public or environment to hazardous substances.

Mitigation 1. The construction of external fuel tank storage racks would be necessary for secure storage of the 480-gallon (1,817-l) drop tanks, along with the construction of an aircraft direct fueling station. The base implements plans and programs for fuel storage, but an amendment to these plans and programs would be necessary to include these additional areas. Operational requirements and services for fuel storage at the base also would be amended to include the additional area. Following the regulatory requirements for proper installation and monitoring of the external fuel tank storage area will decrease the probability of potential exposure of the public or environment to hazardous substances. Implementing this mitigation would reduce the impact to a less than significant level.

Less than Significant Impacts

Hazardous materials management. Locating the F/A-18E/F squadrons and associated personnel to NAF El Centro would not significantly increase hazardous materials usage. Construction activities would be temporary, and any additional hazardous materials would be removed once the construction was complete. The addition of the hazardous materials used by the F/A-18E/F squadrons would not significantly increase the total amount of hazardous materials managed at the base. No mitigation would be required.

Hazardous wastes management. Construction activities in support of the proposed action at NAF El Centro would not significantly increase hazardous waste management. Construction activities would be temporary, and any additional hazardous wastes generated would be removed once the construction was complete. The additional wastes generated by the F/A-18E/F squadron operations would result in an approximate 1.6 percent increase in hazardous waste generation at the base (based on NAF El Centro's 1989 reported quantities). This would not significantly increase the total amount of hazardous wastes managed and disposed from the base. No mitigation would be required.

Installation Restoration Program sites. Less than significant impacts related to IRP sites would result from the proposed action. There are no IRP sites identified within or adjacent to the proposed project locations. Operation activities for the

F/A-18E/F squadrons would include managing and disposing of hazardous materials and wastes in accordance with regulations and basewide protocol. No mitigation would be required.

Asbestos. Less than significant impacts would occur from construction and operation activities because they would not significantly expose people to asbestos. ACM encountered during construction activities would be properly abated. Aircraft operations would not require the use of asbestos. No mitigation would be required.

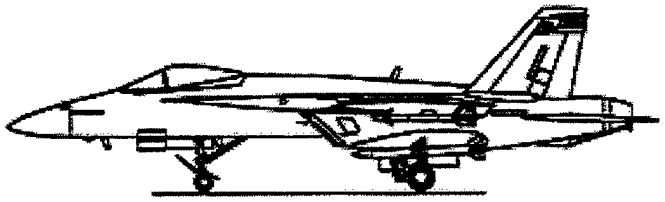
Polychlorinated biphenyls. PCBs are not present at any of the sites proposed for construction, and no new PCB-containing equipment would be installed as part of the proposed action. There would be no impact from PCBs, and no mitigation would be required.

Pesticides. Less than significant impacts related to pesticides would result from implementing the proposed action at NAF El Centro. Although pesticide use may increase incrementally under the proposed action, all pesticide use would be implemented under the base's pesticide management plan. No mitigation would be required.

Lead. Less than significant impacts related to lead would result from construction and operation activities. Constructing and expanding facilities in support of the proposed action could expose workers to lead. If LBP is suspected in a building due to its age (built prior to 1978), proper cautionary and abatement procedures would be implemented when renovations are conducted. Operational activities associated with the F/A-18E/F squadrons would not involve the use of lead. No mitigation would be required.

Ordnance. Less than significant impacts related to ordnance would result from the proposed action. Construction activities associated with the F/A-18 squadrons realignment to NAF El Centro would not occur in areas containing ordnance. No ordnance manufacture, handling, storage, or disposal activities would occur during implementation of the proposed action. No mitigation would be required.

Radon. No radon hazards have been identified at any of the proposed project locations. There would be no impact from radon, and no mitigation would be required.



5.0 CUMULATIVE IMPACTS

5.1 NAS LEMOORE ALTERNATIVE 5-1

5.2 NAF EL CENTRO ALTERNATIVE 5-12

CHAPTER 5
CUMULATIVE IMPACTS

The Council on Environmental Quality's (CEQ) regulations (40 CFR §§ 1500–1508 [1997]) implementing the procedural provisions of the National Environmental Policy Act (NEPA) of 1969, as amended (42 USC § 4321 *et seq.* [1994]) define cumulative effects as:

> The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR § 1508.7 [1997]).

Cumulative effect analyses may be approached in a variety of ways. In this document, it is approached by identifying other projects both on-base and off-base that are expected to be implemented during the same period as the proposed action. In general, only cumulative effects that are significant are discussed. No significant cumulative effects were identified for aesthetics/visual resources, cultural resources, biological resources, hydrology and water quality, or utilities and services. Cumulative effects that are potentially significant under one or more alternatives were identified and are discussed for land use and airspace, socioeconomics, traffic and circulation, air quality, noise, public health and safety, and hazardous materials and waste.

5.1 NAS LEMOORE ALTERNATIVE

The Navy is planning other actions that would increase the air operations and population at NAS Lemoore. The closure of Castle Air Force Base, also located in the San Joaquin Valley, may counterbalance the potential impacts resulting from the expansion of NAS Lemoore, specifically with regard to air emissions. Table 5-1 presents the projected actions for NAS Lemoore, the neighboring communities of Lemoore, and unincorporated Kings County. All of these actions would

Table 5-1
List of Cumulative Projects: NAS Lemoore

Project Name	Location/Schedule	Description
P-186T	On-base 1997–1998	Wing/CVW Administration Bldg. (99 personnel)
P-845	On-base 1997–1998	14 bed hospital/medical facilities
P-024	On-base 1997–1998	Explosive handling facility
P-139	On-base 1997–1998	Gym and addition
	On-base 1999-2000	Potential for realignment of E-2 squadrons, operations, and personnel support facilities (988 personnel, 1,500 family members, and 16 aircraft)
	On-base 2010+	Potential for locating additional F/A-18E/F aircraft or Joint Strike Fighters. The exact number of aircraft and personnel numbers is not presently known.
Avalon Subdivision (City of Lemoore)	SE of Cinnamon Dr./ Hwy. 41 (5 miles off-base)	156 single-family units, to be constructed in 3 phases
TR 567 (City of Lemoore)	Cinnamon Dr. (5 miles off-base)	136 single/multifamily units, to be constructed in phases
TR 739 (City of Lemoore)	E of Cinnamon Dr./ SR-41 (5 miles off-base)	367 single-family units
SR-41 Expansion (Caltrans)	2.5 miles N of SR 198/ SR-41 (5 miles off-base)	Expansion of 2-lane highway to 4 lanes
West Hills Community College (Kings Co.)	NW of SR-41/ SR-198 (5 miles off-base)	100-acre new campus, in planning stage

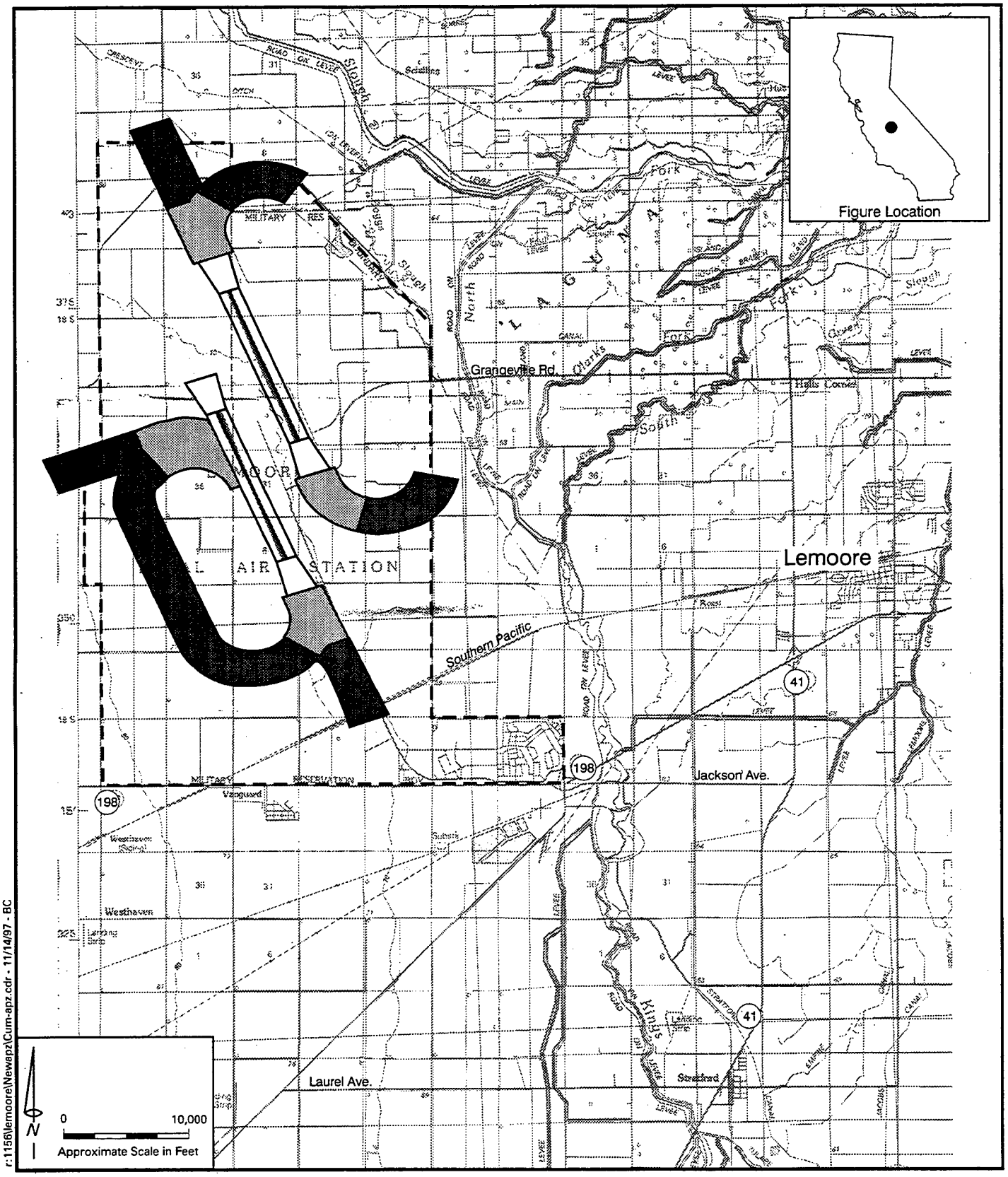
involve the development of new facilities on-base or housing off-base. The Navy is preparing an EIS to evaluate the direct, indirect, and cumulative impacts from the possible realignment of E-2 squadrons to NAS Lemoore. Further analysis of cumulative effects will be provided in that EIS.

Land Use and Airspace

Cumulative actions at NAS Lemoore, including the addition of the E-2 aircraft, would result in modifications of accident potential zones (APZs) (Figure 5-1). An additional area designated APZII would extend off-base to the west under cumulative conditions. This would not affect the compatibility of off-base land uses. All existing and proposed on-base land uses would be compatible with the cumulative APZ designations. The E-2 aircraft operations at NAS Lemoore would not require any changes to runways to accommodate the flight carrier landing practices (FCLPs) conducted by the F/A-18E/F aircraft. No cumulatively significant impacts related to APZs would occur.

Socioeconomics

To determine cumulative impacts, socioeconomic changes were analyzed at NAS Lemoore assuming joint siting of the E-2 aircraft and F/A-18E/F aircraft at the base. With the cumulative impacts scenario, local procurement, changes in civilian



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The APZs for NAS Lemoore extend beyond the northern boundaries of the base.

LEGEND:

- Clear Zone
- Accident Potential Zone I
- Accident Potential Zone II
- NAS Lemoore

NAS Lemoore Accident Potential Zones Under Cumulative Conditions

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Figure 5-1

Source: Wyle 1997

and military employment, and total construction expenditures were combined; civilian and military income and relocation and on-base residence percentage for each appropriate alternative were averaged on a weighted basis. With these inputs, the Economic Impact Forecast System (EIFS) model was run to determine the cumulative impacts for the appropriate affected area. For a discussion of the EIFS model and its rational threshold values (RTVs), see Appendix B.

The affected area is defined as the area in which the principal direct and secondary socioeconomic effects of the proposed action would be likely to occur. The affected area for the cumulative effects at NAS Lemoore is Kings and Fresno counties.

Steady state impacts for the F/A-18E/F would not occur until 2004; therefore, the steady state levels for the relocation of the E-2 were extended into 2004 to fully capture all impacts. For all socioeconomic indicators, the year of greatest impact would be 2004, except for business volume, which would be in 2001. These are the years discussed in this section.

The addition of the E-2 squadron and associated personnel at NAS Lemoore would result in less than significant impacts to population, employment, income and business volume that would be approximately 1 percent over the baseline (Table 5-2). These changes would be within the historic RTV range and would not be considered significant. No mitigation measures would be required.

It is projected that in 2004 an additional 1,131 rental units and 647 owner-occupied units would be required. In Kings and Fresno counties, 13,780 units were vacant in 1994, and the area vacancy rate was 5.1 percent. Approximately 523 single-family residences and 136 single-family and multifamily units (Table 5-1) are expected to be constructed in the city of Lemoore and nearby unincorporated areas of Kings County. At NAS Lemoore, base family housing units would be constructed in 2000 and 2001 for an additional 399 units, and bachelor units would be expanded. The additional requirements for rental units and owner-occupied units would not be considered substantial, and no mitigation measures would be required.

Implementing the proposed projects at NAS Lemoore would result in a beneficial impact to net government revenues. Government revenues would increase by $7,411,000 in 2004. This change would not be considered substantial, and no mitigation measures would be required.

To ascertain the number of students generated with the F/A-18E/F and E-2 projects cumulative impacts scenario, changes in civilian and military employment were combined, and civilian and military relocation and on-base residence percentages for the two sites were averaged on a weighted basis. With these inputs, the EIFS model was run to determine the total number of students that

Table 5-2
Cumulative Socioeconomic Effects at NAS Lemoore

	Population	Employment	Income ($1,000)	Housing		Business Volume ($1,000)	Net Government Revenues ($1,000)	Number of School Children
				Rental	Owner-Occupied			
1998								
Operations	619	314	$7,910	106	63	$8,700	$418	104
Construction	102	381	$9,274	45	0	$30,459	$37	18
Total	721	695	$17,184	151	63	$39,159	$455	122
1999								
Operations	2,892	1,684	$53,514	489	287	$52,708	$2,948	486
Construction	233	874	$21,283	103	0	$69,900	$86	41
Total	3,125	2,558	$74,797	592	287	$122,608	$3,034	527
2000								
Operations	3,955	2,228	$71,429	650	377	$67,772	$4,078	667
Construction	189	710	$17,293	84	0	$56,796	$70	34
Total	4,144	2,938	$88,722	734	377	$124,568	$4,148	701
2001								
Operations	4,418	2,453	$79,064	671	389	$72,897	$4,619	745
Construction	229	858	$20,905	101	0	$68,658	$84	41
Total	4,647	3,311	$99,969	772	389	$141,555	$4,703	786
2002								
Operations	5,110	2,808	$90,729	776	448	$82,716	$5,354	863
Construction	126	474	$11,539	56	0	$37,896	$47	22
Total	5,236	3,282	$102,268	832	448	$120,612	$5,401	885
2003								
Operations	5,803	3,172	$102,545	925	531	$93,819	$6,046	980
Construction	111	417	$10,166	49	0	$33,389	$41	20
Total	5,914	3,589	$112,711	974	531	$127,208	$6,087	1,000
2004								
Operations	7,097	3,836	$124,399	1,131	647	$112,478	$7,411	1,200
Construction*	0	0	$0	0	0	$0	$0	0
Total	7,097	3,836	$124,399	1,131	647	$112,478	$7,411	1,200

Source: EIFS Model.

*The designated activity is not anticipated to occur in this year.

would be generated. (For a discussion of the EIFS model, see Appendix B.) The year of greatest impact at NAS Lemoore would be 2004, when it is estimated by the EIFS model that 1,200 additional students would require public education. The Navy estimates that approximately 1,456 school children would require public education in 2004. Eligible school districts would need to apply for direct payment of impact aid funds by the US Department of Education, which would compensate for the addition of federally connected students. No significant cumulative impacts are anticipated to occur, and no mitigation measures would be required.

Approximately 523 single-family residences and 136 single/multifamily units are expected to be constructed in the city of Lemoore and nearby unincorporated areas of Kings County. New construction would contribute to the public education system as a result of developer fees that are earmarked for school construction. No significant cumulative impacts are anticipated to occur, and no mitigation measures would be required.

Traffic and Circulation

The proposed action, in conjunction with other projects and planned actions, would result in poor traffic conditions at signalized intersections near NAS

Lemoore. The cumulative base condition at NAS Lemoore includes several on-base and off-base projects. For the purposes of the traffic analysis, only those on-base projects that would include additional personnel were considered. The analysis of the cumulative projects was based on the traffic impact analysis prepared for the possible E-2 realignment (Linscott, Law & Greenspan 1997). The traffic generated by the off-base projects was extracted directly from that analysis.

The Wing/CVW Administration Building (P-186T) would require an additional 99 personnel, 33 of which are already stationed at NAS Lemoore (Shubert 1997). The potential realignment of the E-2 squadron would require an additional 988 military personnel at NAS Lemoore. The trip generation estimates have been extracted from the separate EIS that is being prepared for the E-2 project. The off-base projects include three residential developments located about 5 miles (8 km) from base off SR-41 and the new 100-acre (41-ha) campus for West Hills Community College.

The trip generation data for the cumulative projects are shown in Table 5-3. The cumulative projects would generate a total of 11,019 daily trips, 1,105 AM peak hour trips and 1,365 PM peak hour trips. The F/A-18E/F squadrons would contribute an additional 2,923 daily trips, 891 AM peak hour trips and 931 PM peak hour trips.

Table 5-3
Cumulative Trip Generation for NAS Lemoore

Cumulative Projects	Daily	AM In	AM Out	PM In	PM Out
On-base					
Wing/CVW - 66 additional personnel	159	54	6	6	54
E-2 Realignment	1,010	245	30	35	250
Off-base					
Avalon Subdivision - 156 SFDU	1,490	30	85	105	60
TR 567 - 136 SFDU	1,300	25	75	90	50
TR 739 - 367 SFDU	3,505	70	200	240	130
West Hills Community College - 1,500 students	3,555	235	50	100	245
Total – Cumulative Background	**11,019**	**659**	**446**	**576**	**789**
F/A-18E/F Project Traffic	**2,923**	**724**	**167**	**187**	**744**

Source: Linscott, Law, & Greenspan 1997, and Dowling Associates 1997.

The LOS results for cumulative conditions at intersections and roadway segments are shown in tables 5-4 through 5-6. As shown in Table 5-4, the cumulative plus project traffic would result in a change in LOS to E and F at the intersections of SR-198/Main Gate during the AM peak hour and Grangeville Road/SR-41 during the PM peak hour. This would be a cumulatively significant impact.

Table 5-4
Signalized Intersection Operations at NAS Lemoore

Intersection	Peak Hour	Cumulative Delay (seconds)	Cumulative LOS	Cumulative + Project Delay (seconds)	Cumulative + Project LOS
Grangeville Road/SR-41	AM	14.4	B	22.3	C
	PM	15.5	C	103.0	F
SR-198/Main Gate	AM	6.7	B	47.8	E
	PM	12.9	B	40.0	D

Delay (seconds)	LOS
0.0 < 5.0	A
5.1 to 15.0	B
15.1 to 25.0	C
25.1 to 40.0	D
40.1 to 60.0	E
> 60.0	F

Source: Dowling Associates 1997.

Table 5-5
Unsignalized Intersection Operations at NAS Lemoore

Intersection	Peak Hour	Movement	Cumulative Delay (seconds)	Cumulative LOS	Cumulative + Project Delay (seconds)	Cumulative + Project LOS
Avenal Cutoff/EB SR-198 ramps	AM	EB - L/T	5.6	B	5.9	B
		EB – R	3.7	A	3.7	A
		WB - L/T	5.8	B	6.1	B
		WB – R	2.7	A	2.8	A
		NB – L	3.0	A	3.0	A
		SB – L	2.1	A	2.2	A
	PM	EB - L/T	6.0	B	6.1	B
		EB – R	2.9	A	3.0	A
		WB - L/T	6.0	B	6.3	B
		WB – R	2.6	A	2.6	A
		NB – L	2.7	A	2.7	A
		SB – L	2.1	A	2.1	A
Avenal Cutoff/WB SR-198 ramps	AM	WB – L	5.5	B	6.1	B
		WB – R	3.6	A	4.0	A
		NB – L	2.6	A	2.7	A
	PM	WB – L	6.9	B	8.0	B
		WB – R	3.0	A	3.1	A
		NB – L	3.3	A	3.6	A

Source: Dowling Associates 1997.

Table 5-6
Daily Street Segment Operations at NAS Lemoore

Street Segment	Capacity*	Cumulative Volume	Cumulative V/C	Cumulative LOS	Cumulative + Project Volume	Cumulative + Project V/C	Cumulative + Project LOS
SR-198							
West of Main Gate	14,000	4,772	0.34	B	4,798	0.34	B
East of Main Gate	31,000	9,905	0.32	B	11,225	0.36	B
Grangeville Boulevard							
West of SR-41	14,000	6,883	0.49	B	8,137	0.58	C
SR-41							
North of Grangeville Boulevard	43,000	12,416	0.29	A	12,704	0.30	A

Source: Dowling Associates 1997.

* Capacities and Volume/Capacity ratio thresholds are based on Caltrans standards.

LOS = Level of Service
L = Left-turn
R = Right-turn
T = Through movement
EB = Eastbound
WB = Westbound
NB = Northbound
SB = Southbound

Delay (seconds)	LOS	V/C Ratio	LOS
0.0 < 5.0	A	0.00 - 0.30	A
5.1 to 10.0	B	0.31 - 0.50	B
10.1 to 20.0	C	0.51 - 0.75	C
20.1 to 30.0	D	0.76 - 0.90	D
30.1 to 45.0	E	0.91 - 1.00	E
> 45.0	F	> 1.00	F

By increasing the signal cycle length to 120 seconds, the impacts to the intersection of SR-198 and the main gate would be reduced to less than significant levels. The intersection would operate at LOS C and B under cumulative impacts with project conditions during the AM and PM peak hours, respectively. At the intersection of Grangeville Road and SR-41, widening the eastbound approach to provide a left turn lane would improve operations to LOS C and B during AM and PM peak hours, respectively, reducing cumulative impacts to less than significant levels.

The addition of cumulative traffic at the unsignalized intersections would not result in any significant impacts (see Table 5-5). All unsignalized intersections would continue to operate at acceptable levels.

The roadway segments would operate at acceptable levels with the addition of cumulative traffic (see Table 5-6). The cumulative traffic would not result in any changes to the LOS, with the exception of Grangeville Road west of SR-41, which would change from LOS B to C. However, acceptable LOS C or better would be maintained on all roadways. No mitigation would be required.

Air Quality

Cumulative projects identified for the NAS Lemoore area include some on-base construction activities, various housing developments planned for the City of Lemoore, widening of SR-41, development of a community college, and the potential realignment of four E-2 aircraft squadrons (16 aircraft) to the station. In addition, four of the existing ten fleet squadrons of F/A-18C/Ds (48 aircraft) and

10 F/A-18C/D FRS squadron aircraft would remain operational at NAS Lemoore at the conclusion of Phase 2 of the proposed action.

The on-base construction projects would be temporary sources of construction emissions, with some activity being concurrent with construction projects supporting the F/A-18E/F aircraft. Traffic associated with housing development projects and the community college would contribute cumulatively to regional emissions of ozone precursors, but would have only minor cumulative contributions to carbon monoxide levels along roadways near NAS Lemoore.

Appendix E includes analyses of emissions associated with the F/A-18C/D aircraft that would remain at NAS Lemoore following completion of Phase 2 of the proposed action. Annual flight operations by these aircraft would contribute 139.89 tons (126.91 metric tons) per year of reactive organic compound emissions, 66.21 tons (60.06 metric tons) per year of nitrogen oxide emissions, and 62.27 tons (56.49 metric tons) per year of PM_{10} emissions.

In addition to emission from flight operations, the remaining F/A-18C/D aircraft at NAS Lemoore would be responsible for emissions from in-frame engine run-ups and engine test cell use. In-frame run-ups would contribute 7.67 tons (6.96 metric tons) per year of reactive organic compound emissions, 4.56 tons (4.14 metric tons) per year of nitrogen oxide emissions, and 4.18 tons (3.79 metric tons) per year of PM_{10} emissions.

Test cell operations for the remaining F/A-18C/D aircraft would contribute 1.74 tons (1.58 metric tons) per year of reactive organic compound emissions, 9.28 tons (8.42 metric tons) per year of nitrogen oxide emissions, and 1.76 tons (1.60 metric tons) per year of PM_{10} emissions.

Total annual emissions from NAS Lemoore aircraft flight operations at the end of Phase 2 would be 576.94 tons (523.39 metric tons) per year of reactive organic compounds, 430.39 tons (390.44 metric tons) per year of nitrogen oxides, and 255.13 tons (231.45 metric tons) per year of PM_{10}.

Total annual emissions from in-frame maintenance run-ups by NAS Lemoore aircraft at the end of Phase 2 would be 20.13 tons (18.26 metric tons) per year of reactive organic compounds, 21.41 tons (19.42 metric tons) per year of nitrogen oxides, and 10.16 tons (9.22 metric tons) per year of PM_{10}.

Total annual emissions from engine test cell operations at NAS Lemoore at the end of Phase 2 would be 6.04 tons (5.48 metric tons) per year of reactive organic compounds, 39.88 tons (36.18 metric tons) per year of nitrogen oxides, and 3.69 tons (3.35 metric tons) per year of PM_{10}.

As a point of comparison, existing emissions from flight operations by the existing 10 fleet squadrons of F/A-18C/D aircraft plus the existing F/A-18C/D FRS

squadron are: 399.80 tons (362.69 metric tons) per year of reactive organic compounds, 195.37 tons (177.24 metric tons) per year of nitrogen oxide emissions, 182.24 tons (165.33 metric tons) per year of PM_{10} emissions. Annual in-frame run-up emissions by existing NAS Lemoore F/A-18C/D squadrons are: 21.15 tons (19.19 metric tons) per year of reactive organic compounds, 12.57 tons (11.40 metric tons) per year of nitrogen oxides, and 11.54 tons (10.47 metric tons) per year of PM_{10}. Annual test cell emissions associated with existing NAS Lemoore F/A-18C/D squadrons are: 4.77 tons (4.33 metric tons) per year of reactive organic compounds, 25.54 tons (23.17 metric tons) per year of nitrogen oxides, and 4.85 tons (4.40 metric tons) per year of PM_{10}.

The possible realignment of E-2 aircraft squadrons to NAS Lemoore is another potential project that should be considered from a cumulative impact perspective. A separate EIS has been prepared for the realignment of the E-2 squadrons, with NAS Lemoore identified as one of three alternatives (NAWS Point Mugu is the preferred alternative for the E-2 realignment). For NAS Lemoore, the E-2 action would require some new facility construction: a new hangar, training and administrative facilities; new and expanded aircraft maintenance facilities; a new engine test stand; additional personnel support facilities; and new on-base housing facilities. Most construction activity would occur before completion of construction projects that support the F/A-18E/F aircraft. Air quality permits would probably be required the engine test stand and any new central boilers for new or expanded facilities. Permits might also be required for various types of equipment, such as generators, compressors, degreasing tanks, painting facilities, etc.

If based at NAS Lemoore, the E-2 squadrons would add about 20,768 additional flight operations per year. Table 5-7 summarizes the aircraft-related and other emissions that would be associated with the E-2 squadron realignment to NAS Lemoore.

Emissions associated with E-2 aircraft activity would be less than the CAA conformity rule *de minimis* thresholds for ozone and PM_{10} precursors in the San Joaquin Valley. Thus, E-2 realignment to NAS Lemoore would not require a formal conformity determination.

Noise

The noise contours for NAS Lemoore presented in Chapter 4 represent the cumulative effect of added F/A-18E/F aircraft and remaining F/A-18C/D aircraft at NAS Lemoore.

Cumulative projects identified for the NAS Lemoore area include some on-base construction activities, various housing developments planned for the City of Lemoore, widening of SR-41, development of a community college, and the potential realignment of four E-2 aircraft squadrons (16 aircraft) to the station.

Table 5-7
Annual Emissions for E-2 Squadron Activity
NAS Lemoore Alternative

Year	Emissions Component	Estimated Annual Emissions, Tons Per Year: Reactive Organic Compounds	Nitrogen Oxides	Carbon Monoxide	Sulfur Oxides	PM_{10}
	1998, 1999, and 2000+ Conformity Emissions					
1998	Construction Activity	1.07	17.23	7.90	1.78	16.73
	E-2 Operations	1.51	7.37	2.24	0.31	1.85
	E-2 Engine Run-ups	0.39	1.08	0.56	0.05	0.31
	Aircraft Fuel Transfers	0.06	0.00	0.00	0.00	0.00
	Aircraft Support Equipment	0.56	0.83	10.61	0.04	0.07
	Other Permit-Exempt Equipment	0.01	0.13	0.10	0.00	0.02
	On-Base Natural Gas Use	1.32	0.92	14.23	0.03	2.68
	Added Base-Related Traffic	0.08	0.07	0.32	0.00	0.10
	1998 CAA Conformity Total	5.00	27.73	35.98	2.22	13.86
1999	Construction Activity	0.17	2.70	1.35	0.27	2.49
	E-2 Operations	4.53	22.10	6.73	0.93	5.55
	E-2 Engine Run-Ups	1.17	3.24	1.69	0.14	0.93
	Aircraft Fuel Transfers	0.17	0.00	0.00	0.00	0.00
	Aircraft Support Equipment	1.69	2.79	31.89	0.18	0.22
	On-Base Natural Gas Use	0.02	0.38	0.29	0.00	0.06
	Personal Vehicle Work Trips	3.95	2.77	42.69	0.08	8.03
	Added Government Vehicle Use	0.25	0.21	0.96	0.00	0.30
	1999 CAA Conformity Total	11.94	34.19	85.60	1.60	16.41
2000+	E-2 Operations	4.53	22.10	6.73	0.93	5.55
	E-2 Engine Run-Ups	1.17	3.24	1.69	0.14	0.93
	Aircraft Fuel Transfers	0.17	0.00	0.00	0.00	0.00
	Aircraft Support Equipment	1.69	2.79	31.89	0.18	0.22
	On-Base Natural Gas Use	0.02	0.38	0.29	0.00	0.06
	Personal Vehicle Work Trips	3.95	2.77	42.69	0.08	8.03
	Added Government Vehicle Use	0.25	0.21	0.96	0.00	0.30
	2000+ CAA Conformity Total	11.78	31.48	84.25	1.33	15.10
	Conformity Analysis Summary					
	Maximum CAA Conformity Analysis Emissions	11.94	34.19	85.60	2.22	16.41
	De Minimis Threshold	50.00	50.00	na	na	70.00
	Above *De Minimis* Level?	NO	NO	NO	NO	NO
	2000+ Other Emission Sources					
	Base-Related CAA Conformity Analysis Emissions	11.78	31.48	84.25	1.33	15.10
	Engine Test Stand	0.05	1.79	0.19	0.07	0.42
	Other On-Base Permit Sources	0.26	1.30	0.98	0.01	0.20
	Off-Base Natural Gas Use	0.72	9.37	3.99	0.06	1.11
	Additional Household Travel	19.39	18.25	241.10	0.55	56.64
	Total Emissions	32.21	62.19	330.51	2.02	73.48

Source: US Navy 1998.

na - not applicable

The on-base construction projects would be temporary sources of construction noise, with some activity being concurrent with construction projects supporting the F/A-18E/F aircraft. Traffic associated with housing development projects and the community college would make only minimal cumulative contributions to cumulative noise conditions along roadways near NAS Lemoore.

The realignment of E-2 aircraft squadrons to NAS Lemoore would have no significant noise impacts from a cumulative perspective. E-2 aircraft use two

turboprop engines, which are much quieter than the engines used on military jet aircraft. Flight operations by E-2 aircraft would not make any detectable change in CNEL contours at NAS Lemoore. Figure 5-2 illustrates preliminary noise contours around NAS Lemoore if both the E-2 and F/A-18E/F aircraft were to be based there. These contours are nearly identical to the expected noise contours at NAS Lemoore after arrival of the F/A-18E/F aircraft.

Traffic associated with F/A-18E/F personnel and their dependents would contribute cumulatively to noise levels along area roadways, but the net change in noise levels would not be significant (less than 1 dBA).

Public Health and Safety

The planned military projects could result in an increase of 164 F/A-18E/F aircraft and 16 E-2 aircraft for a cumulative increase of 180 aircraft. Any changes in the training procedures associated with the E-2 squadrons that could affect overlapping airspace or nonmilitary airport agreements will be addressed in the E-2 Squadron EIS being prepared by the Navy. The aircraft operations of the F/A-18E/F and other planned military projects would not result in cumulatively significant impacts to public health and safety.

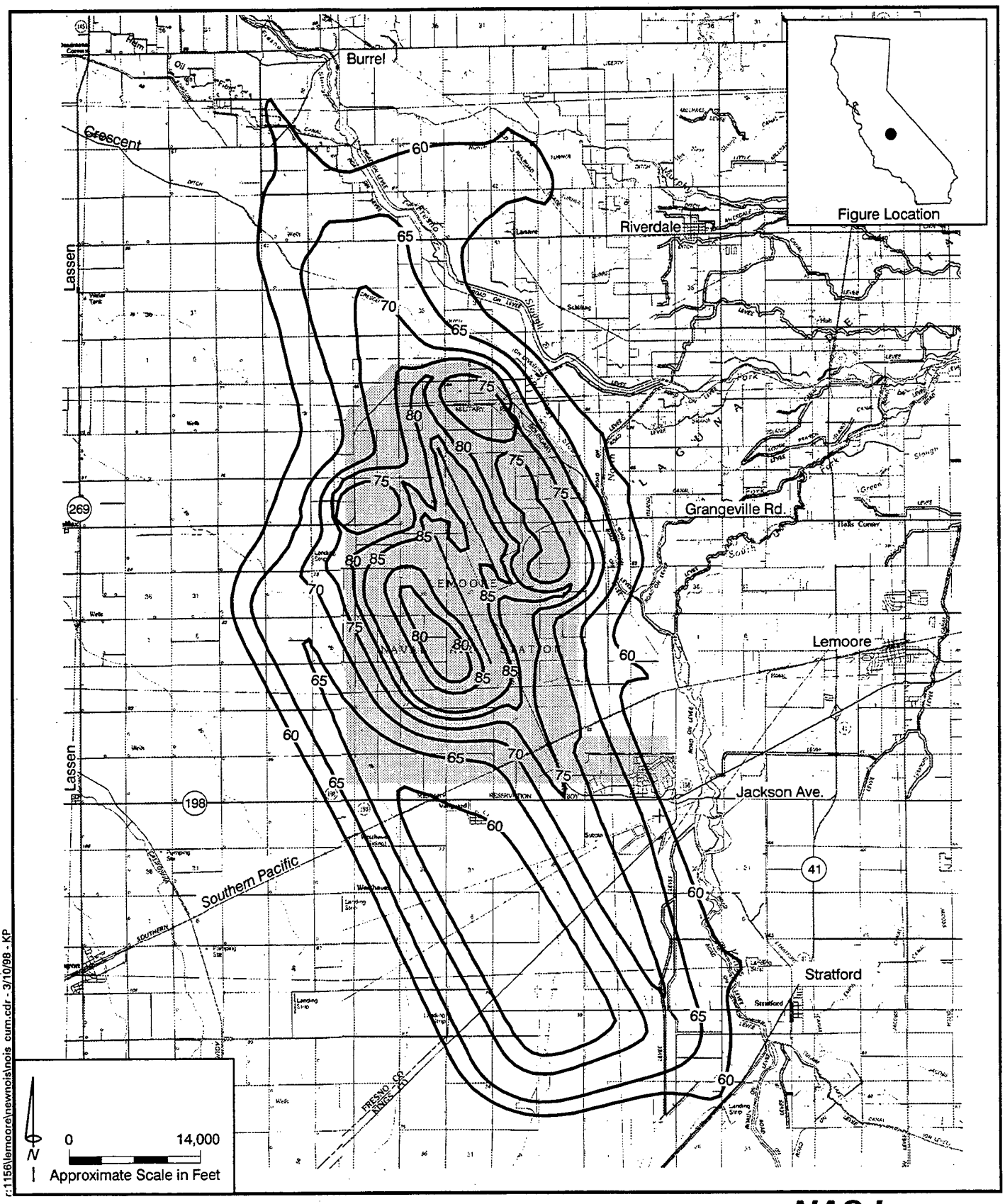
The planned military projects would not result in an increase to hazards from explosives safety and electromagnetic radiation, as additional military projects would be sited according to Navy regulations for explosives safety quantity distance (ESQD) and hazards of electromagnetic radiation to ordnance/personnel/fuel (HERO/HERP/HERF) arcs. No cumulatively significant public health and safety impacts would occur.

Hazardous Materials and Wastes

The planned military projects would result in an increase of hazardous materials and waste used, stored, and transported at NAS Lemoore. The additional increase in hazardous wastes would be handled according to EPA and Navy guidelines for hazardous waste storage and disposal. The planned military projects would be constructed and operated in accordance with approved spill response plans and federal, state, and local laws to prevent on-base releases of hazardous materials and wastes. No cumulatively significant impacts associated with hazardous materials and waste would occur.

5.2 NAF El Centro Alternative

Table 5-8 represents the projects proposed in the near-term for El Centro. No off-base projects are planned in the vicinity of NAF El Centro as determined through conversations with local cities and Imperial County staff. An EIS is being prepared by the Navy to evaluate the direct, indirect, and cumulative impacts of introducing the E-2 squadrons at alternative base locations, including NAF El Centro. Further analysis of the cumulative effects will be provided in that EIS.



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The 65-dB CNEL contour extends off-base along major approach and departure flight paths.

LEGEND:

— 75 — Community Noise Equivalent Level (CNEL)

NAS Lemoore

NAS Lemoore Noise Contours Under Cumulative Conditions

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Figure 5-2

Source: Wyle 1997.

Table 5-8
List of Cumulative Projects: NAF El Centro

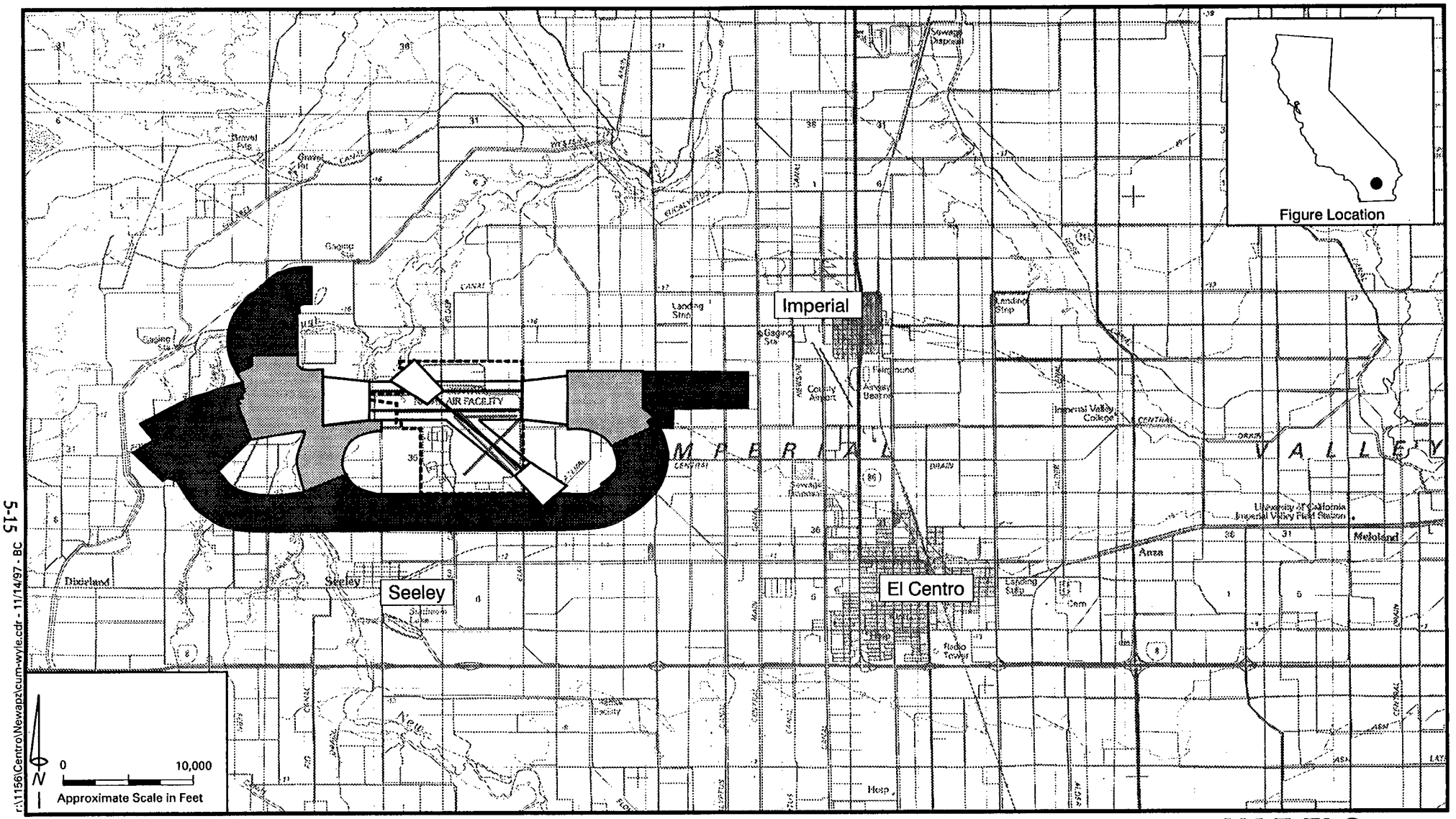
Location	Description
On-base 1997–1998	Child development center (4 additional personnel)
On-base 1997–1998	BEQ and galley (8 additional personnel)
On-base 1997–1998	Gymnasium addition
On-base 1999-2000	Potential for realignment of E-2 squadrons, operations, and personnel support facilities (988 personnel, 1,500 family members, and 16 aircraft)
On-base 2010+	Potential for locating additional F/A-18E/F aircraft or Joint Strike Fighters. The exact number of aircraft and personnel numbers is not presently known.

Land Use and Airspace

The cumulative actions at NAF El Centro, including the addition of the E-2 aircraft, would result in modification of APZs (Figure 5-3). Areas to the east and west of NAF El Centro that are currently designated APZI or APZII would expand slightly. The affected areas are predominantly used for agriculture and recreation and would not be incompatible with the modified APZs. Existing and proposed on-base land uses would be compatible with the cumulative APZ designations. No cumulatively significant impacts related to APZs would occur.

The cumulative noise impacts at NAF El Centro from the F/A-18E/F and E-2 aircraft would result in ongoing incompatibilities between noise sensitive land uses and AICUZ noise restrictions. Current housing, personnel support, and administration facilities at NAF El Centro would be within an 80-dB CNEL or greater noise contour and would be identified by the AICUZ as clearly incompatible with this noise environment. According to AICUZ guidelines, noise attenuation measures should be implemented to reduce interior noise to an acceptable level. While it may be possible to attenuate noise to an acceptable level in some existing administrative or training facilities, it would not be possible in existing or proposed housing facilities. Housing, and probably other types of facilities as well, would have to be relocated off-base to achieve compatibility with AICUZ noise restrictions. Should this installation be selected to receive the F/A-18E/F aircraft, on-base areas would be identified for development of noise-sensitive facilities to assure compatibility with AICUZ noise restrictions. Continuing to use these facilities under existing or future noise conditions would constitute an unavoidable significant cumulative impact.

The E-2 aircraft operations would not require any changes to designated APZs or Clear Zones. In addition, the E-2 aircraft operations at NAF El Centro would not require any changes to runways to accommodate the FCLPs conducted by the E-2 aircraft. Each military action/project review process would evaluate potential



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El Centro and Imperial are outside NAF El Centro's APZ and imaginary surfaces.

LEGEND:

- Clear Zone and Setback
- Accident Potential Zone I
- Accident Potential Zone II
- NAF El Centro Boundary

NAF El Centro Accident Potential Zones Under Cumulative Conditions

Facility Development for West Coast Basing of the F/A-18E/F Aircraft

Figure 5-3

Source: Wyle 1997

impacts to APZs. Therefore, no cumulatively significant impacts related to APZs would occur.

Socioeconomics

To determine cumulative impacts, socioeconomic changes were analyzed at NAF El Centro assuming joint siting of the E-2 and F/A-18E/F aircraft. With the cumulative impacts scenario, local procurement, changes in civilian and military employment, and total construction expenditures were combined; civilian and military income were averaged on a weighted basis. With these inputs, the EIFS model was run to determine the cumulative impacts for the appropriate affected area. For a discussion of the EIFS model and its RTVs, see Appendix B.

The affected area is the area in which the principal direct and secondary socioeconomic effects of the proposed action would be likely to occur. The affected area for the cumulative effects is Imperial County; the county RTVs are listed in Appendix B. Steady state impacts for the F/A-18E/F would not occur until 2007; therefore, the steady state levels for relocating the E-2 was extended into 2007 to fully capture all impacts. In all cases the year of greatest impact would be 2007, which is the year discussed in the following section.

The location of F/A-18E/F proposed projects in combination with the E-2 squadrons and associated personal at NAF El Centro would result in beneficial impacts (Table 5-9) for employment and business volume. Employment would increase almost 13 percent and business volume a little over 7 percent. These increases would be within the historic RTV range.

The cumulative increase to population from 2004 to 2007 would be significant. The direct and indirect population increase would be between 8.5 and 10.7 percent over the baseline conditions. These population changes would not be within the historic RTV range (6.828 to -1.543) and would, therefore, be considered significant. However, these population changes would be accompanied by beneficial impacts to the community, for example, increases in employment, income, business volume, and net government revenues.

There would be cumulatively beneficial impacts to income at NAF El Centro from 2004 to 2007. At $176,426,000 in 2007, income would increase over 11 percent above the baseline conditions. No mitigation would be required, however, because of the beneficial nature of the impact.

The potential realignment of the E-2 squadron would require an additional 988 military personnel and 65 support personnel at NAF El Centro. The trip generation estimates, which account for on-base and off-base personnel, have been extracted from the separate EIS that is being prepared for the E-2 project. Other on-base projects that require additional personnel include the child development center and the BEQ and galley. No off-base projects were included in the analysis.

Table 5-9
Cumulative Socioeconomic Effects at NAF El Centro

	Population	Employment	Income ($1,000)	Housing Rental	Housing Owner-Occupied	Business Volume ($1,000)	Net Government Revenues ($1,000)	Number of School Children
1998								
Operations	620	300	$7,768	106	63	$5,001	$1,217	104
Construction	83	238	$5,968	37	0	$15,847	$619	15
Total	**703**	**538**	**$13,736**	**143**	**63**	**$20,848**	**$1,836**	**119**
1999								
Operations	2,861	1,648	$44,501	482	285	$32,373	$6,771	491
Construction	177	505	$12,664	78	0	$33,625	$1,314	32
Total	**3,038**	**2,153**	**$57,165**	**560**	**285**	**$65,998**	**$8,085**	**523**
2000								
Operations	4,477	2,408	$70,519	723	420	$47,314	$11,254	771
Construction	131	1,799	$9,362	58	0	$24,858	$971	24
Total	**4,608**	**4,207**	**$79,881**	**781**	**420**	**$72,172**	**$12,225**	**795**
2001								
Operations	4,895	2,605	$77,263	790	458	$51,261	$12,407	843
Construction	155	445	$11,137	69	0	$29,572	$1,155	28
Total	**5,050**	**3,050**	**$88,400**	**859**	**458**	**$80,833**	**$13,562**	**871**
2002								
Operations	5,578	2,926	$88,235	887	512	$57,463	$14,307	961
Construction	86	245	$6,147	38	0	$16,323	$638	15
Total	**5,664**	**3,171**	**$94,382**	**925**	**512**	**$73,786**	**$14,945**	**976**
2003								
Operations	6,260	3,248	$99,232	995	573	463,870	416,190	1,079
Construction	76	216	$5,416	33	0	$14,381	$562	13
Total	**6,336**	**3,464**	**$104,648**	**1,028**	**573**	**$78,251**	**$16,752**	**1,092**
2004								
Operations	8,767	4,427	$139,597	1,373	786	487,017	$23,139	1,514
Construction*	0	0	$0	0	0	$0	0	0
Total	**8,767**	**4,427**	**$139,597**	**1,373**	**786**	**$87,017**	**$23,139**	**1,514**
2005								
Operations	9,910	4,966	$158,009	1,552	887	$97,691	$26,297	1,711
Construction*	0	0	$0	0	0	-$0	- 0	0
Total	**9,910**	**4,966**	**$158,009**	**1,552**	**887**	**$97,691**	**$26,297**	**1,711**
2006								
Operations	9,910	4,966	$158,009	1,552	887	$97,691	$26,297	1,711
Construction	0	0	$0	0	0	$0	0	0
Total	**9,910**	**4,966**	**$158,009**	**1,552**	**887**	**$97,691**	**$26,297**	**1,711**
2007								
Operations	11,053	5,505	$176,426	1,731	987	$108,366	$29,455	1,909
Construction*	0	0	$0	0	0	$0	$0	0
Total	**11,053**	**5,505**	**$176,426**	**1,731**	**987**	**$108,366**	**$29,455**	**1,909**

Source: EIFS Model.

*The designated activity is not anticipated to occur in this year.

The trip generation data for the cumulative projects are shown in Table 5-10. The cumulative projects would generate a total of 1,155 daily trips, 319 AM peak hour trips, and 329 PM peak hour trips. The F/A-18E/F squadrons would contribute an additional 5,353 daily trips, 1,616 AM peak hour trips, and 1,690 PM peak hour trips.

It is projected that in 2007 an additional 1,731 rental units and 987 owner-occupied units would be required However, with almost 4,000 units available in 1994, it can be projected that housing units would be available in Imperial County in 2007.

Table 5-10
Cumulative Trip Generation for NAF El Centro

Cumulative Projects	Daily	AM In	AM Out	PM In	PM Out
On-base					
Child development center - 4 personnel	10	4	0	0	4
BEQ and galley - 8 personnel	19	8	0	0	8
E-2 Realignment	1,126	275	32	37	280
Total - Cumulative Background	**1,155**	**287**	**32**	**37**	**292**
F/A-18E/F Squadrons	**5,353**	**1,305**	**309**	**347**	**1,343**

Source: Linscott, Law, & Greenspan 1997, and Dowling Associates 1997.

Implementation of the proposed projects at NAF El Centro would result in a beneficial impact to net government revenues. Government revenues would increase by $29,455,000 in 2007, and no mitigation measures would be required.

To ascertain the number of students generated with the F/A-18EF and E-2 projects cumulative impacts scenario, changes in civilian and military employment were combined; and civilian and military relocation and on-base residence percentages for the two sites were averaged on a weighted basis. With these inputs, the EIFS model was run to determine the total number of students that would be generated. The year of greatest impact at NAF El Centro would be 2007, which is when approximately 1,909 additional students would require public education. The Navy estimates that approximately 2,546 additional students would require public education in 2007. Eligible school districts would apply for direct payment of impact aid funds by the US Department of Education, which would compensate for the addition of federal students. No significant cumulative impacts are anticipated to occur, and no mitigation measures would be required.

Traffic and Circulation

The proposed action in conjunction with other projects and planned actions would contribute to poor traffic conditions in some areas near NAF El Centro. The cumulative base condition at NAF El Centro includes several on-base projects. For the purposes of the traffic analysis, only the on-base projects that would include additional personnel were considered. The analysis of the cumulative projects was based on the traffic impact analysis prepared for the E-2 realignment (Linscott, Law & Greenspan 1997). The traffic generated by the off-base projects was extracted directly from that analysis.

The LOS results for cumulative conditions at intersections and roadway segments are shown in Tables 5-11 and 5-12. As shown in Table 5-11, the cumulative plus project traffic would result in an unacceptable LOS at the intersections of Bennett Road/Even Hewes Highway and Forrester Road/Even Hewes Highway during the AM and PM peak hours.

Table 5-11
Unsignalized Intersection Operations at NAF El Centro

Intersection	Peak Hour	Cumulative Delay (seconds)	Cumulative LOS	Cumulative + Project Delay (seconds)	Cumulative + Project LOS
Drew Road/Evan Hewes	AM	3.4	A	8.3	B
	PM	3.0	A	4.1	A
Bennett Road/Evan Hewes	AM	7.1	B	Overflow	F
	PM	6.8	B	Overflow	F
Forrester Road/Evan Hewes	AM	9.0	B	Overflow	F
	PM	9.4	B	Overflow	F

Source: Dowling Associates 1997.

Table 5-12
Daily Street Segment Operations at NAF El Centro

Street Segment	Capacity*	Cumulative Volume	Cumulative V/C	Cumulative LOS	Cumulative + Project Volume	Cumulative + Project V/C	Cumulative + Project LOS
Evan Hewes (S-80)							
West of Drew Road	14,000	3,762	0.27	A	4,244	0.30	A
East of Forrester Road	14,000	6,137	0.44	B	8,545	0.61	C
Drew Road							
North of Evan Hewes	14,000	1,275	0.09	A	1,435	0.10	A
South of Evan Hewes	14,000	2,575	0.18	A	2,735	0.20	A
Bennett Road							
South of Evan Hewes	14,000	2,241	0.16	A	3,311	0.24	A
Forrester Road							
North of Evan Hewes	14,000	3,709	0.26	A	4,405	0.31	B
South of Evan Hewes	14,000	6,122	0.44	B	6,496	0.46	B

Source: Dowling Associates 1997.

* Capacities and Volume/Capacity ratio thresholds are based on Caltrans standards.

LOS = Level of Service
L = Left-turn
R = Right-turn
T = Through movement

EB = Eastbound
WB = Westbound
NB = Northbound
SB = Southbound

Delay (seconds)	LOS	V/C Ratio	LOS
0.0 < 5.0	A	0.00 - 0.30	A
5.1 to 10.0	B	0.31 - 0.50	B
10.1 to 20.0	C	0.51 - 0.75	C
20.1 to 30.0	D	0.76 - 0.90	D
30.1 to 45.0	E	0.91 - 1.00	E
> 45.0	F	> 1.00	F

By installing a signal at the intersection of Bennett Road and Evan Hewes Highway, providing a separate southbound left turn lane, and allowing free right-turns for westbound traffic, the cumulative impacts would be reduced and the operation would improve to LOS C during the AM and PM peak hour. This mitigation would require widening the southbound approach to provide for a separate left turn lane and the free right-turn. The traffic volumes at this intersection would meet Caltrans peak hour signal warrants. Implementing this mitigation would reduce the impact to a less than significant level.

By installing a signal at the intersection of Forrester Road and Evan Hewes Highway, the impacts of the cumulative traffic would be reduced, and operations would improve to LOS C and B during the AM and PM peak hours, respectively. The intersection would meet Caltrans peak-hour signal warrants. Implementing this mitigation would reduce the impact to a less than significant level.

The intersection of Drew Road and Even Hewes would continue to operate at acceptable levels with or without the addition of cumulative traffic.

The addition of cumulative traffic to the roadway segments would not result in any significant impacts (see Table 5-12). The project traffic results in a change in LOS from B to C on Evan Hewes Highway east of Forrester Road, but it is not considered a significant impact. All roadway segments would operate at LOS C or better with or without the proposed project.

Air Quality

Cumulative projects identified for the NAF El Centro area include some on-base construction activities and the potential realignment of four E-2 aircraft squadrons (16 aircraft) to the NAF El Centro. The on-base construction projects would be temporary sources of construction emissions, with some activity being concurrent with construction projects supporting the F/A-18E/F aircraft.

The possible realignment of E-2 aircraft squadrons to NAF El Centro is the most significant potential cumulative project from an air quality perspective. A separate EIS has been prepared for the realignment of the E-2 squadrons; with NAF El Centro identified as one of three alternative sites. For NAF El Centro, the E-2 action would require significant new facility construction: a new parallel runway and associated facilities; new hangar space; new administrative and training facilities; a new engine test stand; new aircraft maintenance facilities; additional personnel support facilities; and new on-base housing facilities. Most construction activity would occur before completion of construction projects that support the F/A-18E/F aircraft. Air quality permits would be required for the engine test stand and any new central boilers for new or expanded facilities. Permits might also be required for various types of equipment, such as stationary generators, compressors, degreasing tanks, painting facilities, etc.

If based at NAF El Centro, the E-2 squadrons would add about 20,768 additional flight operations and associated aircraft emissions per year. Table 5-13 summarizes the aircraft-related and other emissions that would be associated with the E-2 squadron realignment to NAF El Centro. Emissions associated with E-2 aircraft activity would be less than the CAA conformity rule *de minimis* thresholds for Imperial County. Thus, E-2 realignment to NAF El Centro would not require a formal conformity determination.

Table 5-13
Annual Emissions for E-2 Squadron Activity
NAF El Centro Alternative

Year	Emissions Component	Estimated Annual Emissions, Tons Per Year: Reactive Organic Compounds	Nitrogen Oxides	Carbon Monoxide	Sulfur Oxides	PM_{10}
	1998, 1999, and 2000+ Conformity Emissions					
1998	Construction Activity	1.13	18.20	8.33	1.88	17.73
	E-2 Operations	1.51	7.37	2.24	0.31	1.85
	E-2 Engine Run-ups	0.39	1.08	0.56	0.05	0.31
	Aircraft Fuel Transfers	0.08	0.00	0.00	0.00	0.00
	Aircraft Support Equipment	0.56	0.93	10.63	0.06	0.07
	On-Base Natural Gas Use	0.01	0.19	0.15	0.00	0.03
	Personal Vehicle Work Trips	1.32	0.92	14.23	0.03	2.68
	Added Government Vehicle Use	0.10	0.07	0.31	0.00	0.10
	1998 CAA Conformity Total	5.11	28.76	36.45	2.32	12.31
1999	Construction Activity	0.17	2.70	1.35	0.27	2.36
	E-2 Operations	4.53	22.10	6.73	0.93	5.55
	E-2 Engine Run-Ups	1.17	3.24	1.69	0.14	0.93
	Aircraft Fuel Transfers	0.25	0.00	0.00	0.00	0.00
	Aircraft Support Equipment	1.69	2.79	31.89	0.18	0.22
	On-Base Natural Gas Use	0.03	0.58	0.44	0.00	0.09
	Personal Vehicle Work Trips	3.95	2.77	42.69	0.08	8.03
	Added Government Vehicle Use	0.30	0.21	0.94	0.00	0.30
	1999 CAA Conformity Total	12.08	34.39	85.73	1.60	17.49
2000+	E-2 Operations	4.53	22.10	6.73	0.93	5.55
	E-2 Engine Run-Ups	1.17	3.24	1.69	0.14	0.93
	Aircraft Fuel Transfers	0.25	0.00	0.00	0.00	0.00
	Aircraft Support Equipment	1.69	2.79	31.89	0.18	0.22
	On-Base Natural Gas Use	0.03	0.58	0.44	0.00	0.09
	Personal Vehicle Work Trips	3.95	2.77	42.69	0.08	8.03
	Added Government Vehicle Use	0.30	0.21	0.94	0.00	0.30
	2000+ CAA Conformity Total	11.92	31.69	84.38	1.33	15.13
	Conformity Analysis Summary					
	Maximum CAA Conformity Analysis Emissions	12.08	34.39	85.73	2.32	17.49
	De Minimis Threshold	100.00	100.00	na	na	100.00
	Above *De Minimis* Level?	NO	NO	NO	NO	NO
	2000+ Other Emission Sources					
	Base-Related CAA Conformity Analysis Emissions	11.92	31.69	84.38	1.33	15.13
	Engine Test Stand	0.05	1.79	0.19	0.07	0.42
	Other On-Base Permit Sources	0.26	1.30	0.98	0.01	0.20
	Off-Base Natural Gas Use	0.72	9.37	3.99	0.06	1.11
	Additional Household Travel	19.39	18.25	241.10	0.55	56.64
	Total Emissions	32.35	62.39	330.64	2.02	73.51

Source: US Navy 1998.
na - not applicable

Traffic associated with F/A-18E/F personnel and their dependents would contribute cumulatively to regional emissions of ozone and PM_{10} precursors. This traffic would also add somewhat to carbon monoxide levels along roadways near NAF El Centro, but would not result in any violations of state or federal carbon monoxide standards.

Noise

Cumulative projects identified for the NAF El Centro area include some on-base construction activities and the potential realignment of four E-2 aircraft squadrons

(16 aircraft) to the station. The on-base construction projects would be temporary sources of construction noise, with some activity being concurrent with construction projects supporting the F/A-18E/F aircraft.

The possible realignment of E-2 aircraft squadrons to NAF El Centro would have no significant noise impacts from a cumulative perspective. E-2 aircraft use two turboprop engines, which are much quieter than the engines used on military jet aircraft. Flight operations by E-2 aircraft would not make any detectable change in CNEL contours at NAF El Centro. Figure 5-4 illustrates preliminary noise contours around NAF El Centro if both the E-2 and F/A-18E/F aircraft were to be based there. These contours are nearly identical to the expected noise contours at NAF El Centro after arrival of the F/A-18E/F aircraft.

Traffic associated with E-2 personnel and their dependents would contribute cumulatively to noise levels along area roadways, but the net change in noise levels would not be significant (less than 1 dBA).

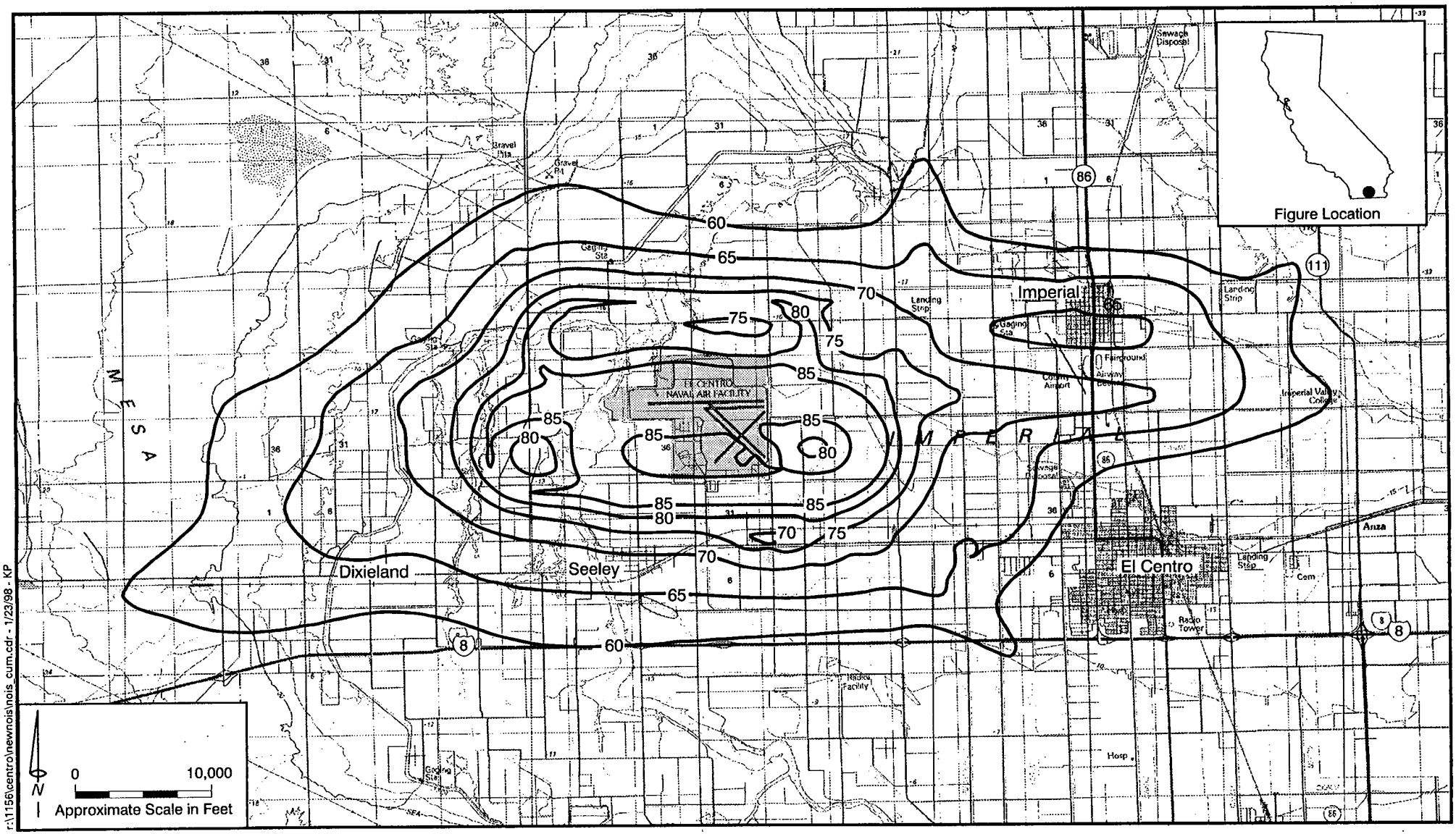
Public Health and Safety

The planned military projects could result in an increase of 164 F/A-18E/F aircraft and 16 E-2 aircraft for a cumulative increase of 180 aircraft. The resulting increase in the use of NAF El Centro airspace may result in increased hazards to airspace safety. Modifications to air traffic circulation patterns may be required to accommodate the additional aircraft operations and training. Air traffic control specialists for NAF El Centro will need to assess additional aircraft operations and training to evaluate the increased management of the airspace and to reduce hazards to airspace safety. Implementing any necessary modifications to overlapping airspace or agreements with nonmilitary airports would reduce hazards to airspace safety.

The planned military projects would not result in an increase to hazards from explosives safety and electromagnetic radiation because additional military projects would be sited according to Navy regulations for ESQD and HERO/HERP/HERF arcs. No cumulatively significant public health and safety impacts would occur.

Hazardous Materials and Wastes

The planned military projects would result in an increase in hazardous materials and wastes used, stored, and transported at NAF El Centro. The additional hazardous wastes would be handled according to EPA and Navy guidelines for hazardous waste storage and disposal. The planned military projects would be constructed and operated in accordance with approved spill response plans and federal, state, and local laws to prevent on-base releases of hazardous materials/wastes. No cumulatively significant impacts associated with hazardous materials and waste would occur.



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The addition of F/A-18EF aircraft under the cumulative scenario would cause noticeable changes to the existing noise contours. See Fig 3-33.

LEGEND:

— 75 — Community Noise Equivalent Level (CNEL)

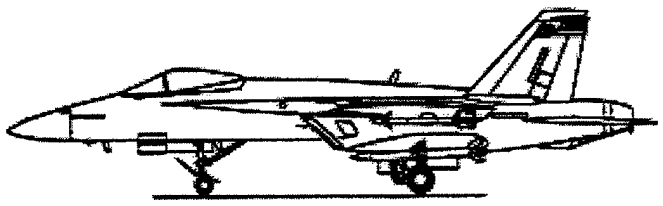
NAF El Centro

NAF El Centro
Cumulative Noise Contours

Facility Development for West Coast Basing of the F/A-18E/F Aircraf

Source: Wyle 1997.

Figure 5-4



6.0 OTHER CONSIDERATIONS

6.1	IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES	6-1
6.2	UNAVOIDABLE ADVERSE IMPACTS	6-2
6.3	RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY	6-2
6.4	ENVIRONMENTAL JUSTICE (EO 12898)	6-2
6.5	PROTECTION OF CHILDREN FROM ENVIRONMENTAL HEALTH RISKS (EO 13045)	6-6

CHAPTER 6
OTHER CONSIDERATIONS

This chapter addresses specific topics that the National Environmental Policy Act (NEPA) requires and includes a discussion of environmental justice and the protection of children from environmental health risks. Unavoidable adverse impacts, any irreversible or irretrievable commitment of resources, and the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity are identified and analyzed. In addition, issues related to environmental justice are presented in accordance with Executive Order 12898, and issues related to protection of children from environmental health risks are presented in accordance with Executive Order 13045.

6.1 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES

NEPA requires an analysis of significant irreversible effects. Resources that are irreversibly or irretrievably committed to a project are those that are used on a long-term or permanent basis. This includes the use of nonrenewable resources, such as metal, wood, fuel, paper, and other natural or cultural resources. Human labor also would be a nonretrievable resource. These resources are nonretrievable in that they would be used for this project when they could have been used for other purposes. Another impact that falls under the category of the irreversible and irretrievable commitment of resources is the unavoidable destruction of natural resources that could limit the range of potential uses of that particular environment.

To support the West Coast basing of the F/A-18E/F aircraft, related support personnel, and their family members, equipment and functions would require the construction, modification, or expansion of facilities to provide space for operational, training, maintenance, and personnel support. Construction of the proposed facilities would result in an irretrievable commitment of nonrenewable resources, such as building materials, fuel for aircraft, construction vehicles, and equipment. In addition, the project would commit human labor for construction,

engineering, environmental review, and compliance and, after project completion, for operation and maintenance time.

The proposed action ultimately would result in a net increase in the number of aircraft and air operations at the receiving installation, and, subsequently, the commitment of fuel and other nonrenewable resources also would be increased. Therefore, the proposed action would constitute an irreversible or irretrievable commitment of nonrenewable or depletable resources.

6.2 Unavoidable Adverse Effects

NEPA requires a discussion of any adverse environmental effects that cannot be avoided (40 CFR § 1502.16 [1997]). Significant and unmitigable environmental impacts to noise have been identified at NAF El Centro. Increased aircraft operation associated with implementing the proposed action would result in noise levels in excess of identified significance thresholds. The EIS identified no mitigation that would reduce these noise impacts below the significance threshold.

All other potentially significant impacts of the proposed action would be mitigable to a less than significant level by implementing mitigation measures recommended in this document.

6.3 Relationship Between Short-term Uses and Long-term Productivity

NEPA requires a discussion of the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity (40 CFR § 1502.16 [1997]). The environmental productivity of the two alternative bases considered for basing the F/A-18E/F aircraft historically has been related to their operation as naval air stations/facilities. The proposed action would result in both short- and long-term environmental effects. Short-term effects primarily are related to construction activities. Temporary impacts would include construction-related traffic and emissions at the bases. Long-term environmental effects would be related to any unavoidable impacts; namely, unmitigable environmental impacts to noise identified at NAF El Centro.

6.4 Environmental Justice (EO 12898)

On February 11, 1994, President Clinton issued the Executive Order on Federal Actions to Address Environmental Justice in Minority and Low-income Populations. This order requires that "each Federal agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations (Executive Order (EO) 12898, 59 Federal Register 7629 [Section 1-101])." On April 21, 1995, the Secretary of Defense submitted a formal environmental justice strategy and implementation plan to the US EPA. To comply with the executive order, the following actions have occurred concurrently with this EIS:

- Gathered economic, racial, and demographic information generated from the 1990 census to identify areas of low-income and high minority populations in the areas potentially exposed to project impacts;
- Assessed the alternatives for disproportionate impacts resulting from on-site activities associated with the proposed action; and
- Encouraged community participation and input through public meetings and extensive public notification, as described in Section 1.4, Public Involvement Process of this document.

Analysis Methodology

The affected area for NAS Lemoore includes Kings and Fresno counties, and the affected area for NAF El Centro is Imperial County. To determine whether low-income and minority populations could be disproportionately affected by implementing the proposed action at NAS Lemoore or NAF El Centro, census data was used to identify income and population characteristics of neighborhoods near the installations. The percentages of low-income and minority populations in each census tract were compared to the county average to determine whether they were disproportionately larger than the county-wide average. Households were classified as being below the poverty level if their total family income or unrelated individual income was less than the nation's poverty threshold specified for the applicable family size.

Traffic, air quality, and noise would be the only impacts that could affect this larger region. While traffic and air quality would affect off-base areas with low-income and minority populations, these impacts were determined not to disproportionately affect any one group. Other environmental effects of the proposed action were determined to be either beneficial impacts or impacts that would not disproportionately affect any one group. With regard to the basing of the F/A-18E/F aircraft, the primary environmental justice issue would be the increase in noise levels from the additional aircraft operations. The potential for the increase in noise levels off-base from the additional aircraft operations to disproportionately affect low-income and minority populations has been evaluated for each alternative base.

The long-term overall economic effects of the proposed action would be positive to the communities, including minority and low-income population. The proposed action would not result in changes to off-base land uses and therefore would not disproportionately affect existing neighborhoods. Biological resource impacts would only occur on-base and would therefore not affect low-income or minority populations. Water resource issues are not relevant because impacts related to this resource (e.g., flooding) would not disproportionately affect any one group. Air quality impacts occur over a large area and would not disproportionately affect any one group. Likewise, hazardous materials issues would not disproportionately affect any one group. No significant impacts to

visual or cultural resources were identified, and therefore, no disproportionately high or adverse impact would affect any one group.

Traffic impacts from the proposed action would occur on local and regional highways in the affected areas. Regional impacts would result from the slight increases in traffic volumes on the highways accessing the installations. Local impacts would occur at intersections closest to the installations from the increased number of vehicles entering and leaving the installation. Because of the regional character of these transportation facilities, the range of populations that use these facilities, and the small contribution of traffic from the proposed action, traffic impacts from the proposed action would not result in disproportionately high or adverse effects upon minority and low-income populations.

6.4.1 NAS Lemoore Alternative

Existing Demographics

Fresno County census tracts 77, 78, and 82 are closest to NAS Lemoore. Table 6-1 identifies racial composition and the percentage of the population below the poverty level for these census tracts and compares them to Fresno County. Census tracts 77, 78, and 82 have a higher percentage of population living below the poverty level compared to the county (19, 18, and 29 percent, respectively, versus 17 percent). Census tracts 77, 78, and 82 also have a higher Hispanic population than the county total (38, 94, and 74 percent, respectively, versus 35 percent). The median family income in Fresno County is $29,970 (US Census 1991, 1992).

Table 6-1
Poverty Level and Race by Census Tract
Compared with Fresno and Kings Counties

	Census Tract							
Percentage	77	78	82	Fresno County	2	3	16	Kings County
Below Poverty Level	19	18	29	17	13	11	23	15
Hispanic Origin	38	94	74	35	20	7	65	34
Black	5	<1	<1	9	3	11	2	8
Native American	<1	<1	<1	<1	<1	<1	10	<1
Asian	2	<1	6	8	<1	<1	<1	3
Total Population	4,149	7,050	5,889	667,490	2,126	7,581	8,873	101,469

Source: Wessex 1994.

Kings County census tracts 2, 3, and 16 are adjacent to NAS Lemoore. As shown in Table 6-1, census tract 16 has a larger percentage of its population living below the poverty level than the county total (23 percent versus 15 percent). Census tract 16 also includes higher Hispanic and Native American populations than the county total (65 and 10 percent, respectively, versus 34 and less than 1 percent),

while census tract 3 includes higher black populations than the county total (11 percent versus 8 percent). The median family income in Kings County is $27,614 (US Census 1991, 1992).

Potential Impacts

Impacts to minority and low-income populations from the proposed action at NAS Lemoore would primarily result from noise generated by additional aircraft operations. Census tracts 77, 78, and 82 in Fresno County and census tracts 3 and 16 in Kern County contain larger minority or low-income populations than the county-wide average. Environmental justice impacts to these populations would be considered significant if 50 percent or more of the census tract with higher than average minority or low-income populations would be affected.

Using a geographic information system, an overlay analysis was performed to determine the area of these census tracts within the 65-dB CNEL or greater noise contours. (Future noise contours from implementing the proposed action are shown on Figure 4-7.) As shown in Table 6-2, approximately 10 percent or less of census tracts 16, 77, 78, and 82 would be affected by the proposed action. Census tract 3, with 94 percent of its area within the 65-dB contour, is within the boundaries of NAS Lemoore. However, no significant adverse noise impacts have been identified at NAS Lemoore; therefore, there would be no disproportionate high or adverse noise impacts to minority populations in census tract 3. No other significant adverse impact has been identified at NAS Lemoore that cannot be mitigated to a less than significant level, and disproportionate high and adverse impacts have not been identified.

Table 6-2
Area of Noise Contours at NAS Lemoore

Census Tract	Hectares	Square Miles	Area within 65-dB Contours
3	70,123	270.63	94%
16	1,704,282	6,577.46	5%
77	186,596	720.14	6%
78	816,181	3,149.95	10%
82	817,419	3,154.73	0%

Source: Wessex 1994.

6.4.2 NAF El Centro Alternative

Existing Demographics

Imperial County census tracts 110, 111, 112.01, and 123.01 are adjacent to NAF El Centro. As shown in Table 6-3, these census tracts have a smaller percentage of population living below the poverty level than the county total. Census tracts 110, 111, and 112.01 include a slightly higher black population than the county

Table 6-3
Poverty Level and Race by Census Tract
Compared with Imperial County

	Census Tract				
Percentage	110	111	112.01	123.01	Imperial County
Below Poverty Level	10	12	12	16	21
Hispanic Origin	50	45	62	13	66
Black	3	3	4	<1	2
Native American	1	1	3	1	1
Asian	1	3	2	1	1
Total Population	5,571	3,021	1,473	719	109,303

Source: Wessex 1994.

total (3, 3, and 4 percent, respectively, versus 2 percent), while census tracts 111 and 112.01 include a higher Asian population than the county total (3 and 2 percent, respectively, versus 1 percent). The Native American population in census tract 112.02 is also higher than the county percentage. The median family income in Imperial County is $25,147 (US Census 1991,1992).

Potential Impacts

Impacts to minority populations from the proposed action at NAF El Centro would primarily result from off-base noise generated by the additional aircraft operations. Using a geographic information system, an overlay analysis was performed to determine what portion of each census tract would be covered by 65 dB CNEL or greater noise contours. As shown in Table 6-4, none of these census tracts exceed the 50 percent threshold and, therefore, no disproportionately high and adverse noise impacts would result from the proposed action. No other significant adverse impact has been identified at NAF El Centro that cannot be mitigated to a less than significant level, and disproportionate high and adverse impacts have not been identified.

Table 6-4
Area of Noise Contours at NAF El Centro

Census Tract	Hectares	Square Miles	Area within 65-dB Contours
110	180,470	696.50	17.7%
111	201,258	776.73	41.7%
112.01	14,394	55.55	2.3%

Source: Wessex 1994.

6.5 PROTECTION OF CHILDREN FROM ENVIRONMENTAL HEALTH RISKS (EO 13045)

Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks (EO 13045, 62 Federal Register 19885), states that each federal

agency shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children and ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks. Environmental health risks and safety risks mean risks to health or to safety that are attributable to products or substances that the child is likely to come into contact with or to ingest.

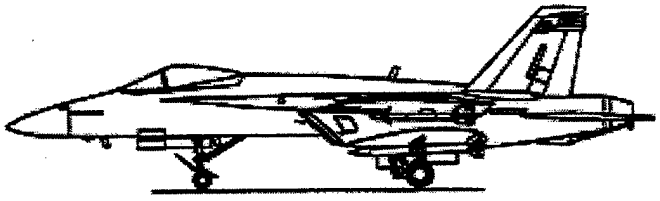
The US Navy anticipates that EO 13045 would apply to the noise environment around schools and the potential overcrowding of schools. Noise impacts would be considered significant if the proposed project would alter existing noise environments so that public schools would be located in an area exceeding the 65-dB CNEL. Temporary construction activities to remodel existing facilities or to build new facilities would not be located near schools. Increased aircraft operations could affect existing noise environments at public schools. School overcrowding would be considered significant if the additional students generated by the proposed project exceeded the capacity of the affected schools.

Because schools in the NAS Lemoore area are either near or over capacity, the additional 783 to 1,283 students projected to be generated at NAS Lemoore would significantly affect these schools. School districts may be eligible for compensation for the federally connected students by impact aid, a federal program intended to compensate local school districts for burdens placed on their resources by federal activity. Schools must apply for impact aid through a competitive process, and funds are paid directly by the Department of Education. The affected schools near NAF El Centro would be able to accommodate the additional students generated by the F/A-18E/F squadrons at the facility.

Projected noise levels at schools near NAS Lemoore would remain within compatible levels (65-dB CNEL or less) for school facilities and therefore would not adversely affect public schools in the area. Noise levels exceeding 65-dB CNEL would encompass significant off-base areas near NAF El Centro. The city of Imperial would be encompassed by the 65-dB CNEL contour, and the community of Seeley would be within the 65 to 75-dB CNEL contours. Children attending Seeley Elementary School (kindergarten through 8th grade) and three schools in the city of Imperial would be affected by CNEL values above 65-dB.

The proposed project at NAF El Centro includes construction of a child development center on-base within a 75- to 80-dB noise environment. High noise levels may have a greater influence on children since the ability to communicate or concentrate, the capacities most affected by noise, are still developing in children. Some studies have found that high noise levels may lead to attention and reading deficits, impaired speech perception, and reduced cognitive abilities in children (Bronzaft 1981, Broadbent 1979).

Navy development guidelines state that educational facilities should be prohibited within a 75- to 80-dB noise environment. In addition, California law generally prohibits construction of schools in airport 65-dB CNEL contours. Although the child development center is not an educational facility, it is oriented toward children. Construction of the child development center in an incompatible noise environment is therefore identified as a significant and mitigable impact in Section 4.3 of the EIS. Mitigation for this impact involves relocating the facility off-base. There would be no impacts with respect to children's environmental health and safety.



7.0 REFERENCES

7.0 REFERENCES 7-1

CHAPTER 7
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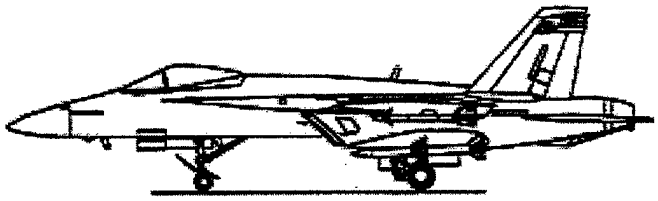
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8.0 AGENCY CONSULTATION AND COORDINATION

8.1	MILITARY REPRESENTATIVES CONTACTED	8-1
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CHAPTER 8
CONSULTATION AND COORDINATION

8.1 MILITARY REPRESENTATIVES CONTACTED

NAS Lemoore

Ken Billick, Assistant Security Officer, Security Department
Tim Castro, Air Program Manager
Lt. Bob Craig, Air Traffic Control Facility Officer
John Crane
Florence Crosby, LCDR, Director of Administration, Hospital
Bill Ike, Environmental Protection Specialist
Teresa Mitchell
Sue Mora, Solid Waste Specialist
William O'Donnell, Program Manager
Katherine Ormsbee, Administration Officer, Hospital
Terry Rayback
L.N. Reith, Military Security Officer
Duane Rustad, Fire Chief, Fire Department
Bill Smith
David Sparlin, Public Works Department
Jerry Stewart, Utilities Engineer
Steve Thompson, Lieutenant
Phil Tomkins, Commander
Jeff Stivers, Captain
Victor Vaughn, III, Assistant Air Traffic Control Facility Officer
Jim Venturino, Environmental Protection Specialist
Rainer Winkelmann, Assistant Weapons Officer

NAF El Centro

Manny Bay, Director, Environmental Division
Jim Collins, Biologist
Ron Curiel, Solid Waste Specialist, Pollution Prevention Management Program

Shawn Fitzgerald, HMCS Senior Chief, Medical and Dental Clinic
Dwight Flowers, Stormwater and Wastewater Specialist, Public Works Department
Patrick Friel, Air Traffic Facility Officer
Joe Gallant, Base Pesticide Coordinator
David Godsey, Water and Wastewater Plant Operator
Jerald Kear, Energy Specialist, Public Works Department
Dale Leonard, Director of Branch Clinic Operations and Naval Medical Centers
Salvador Rodriguez, HMCS Senior Chief
John Stammreich, Security Officer, Security Department
Dave Tousseau, Public Works Environmental Division
Lt. Ed Sewester, Public Works Officer
Paul Weller, Utilities Specialist, Public Works Department
Ken Zurn, Fire Chief, Fire Department

8.2 NAVAL AVIATION DEPOT NORTH ISLAND

Lyn P. Coffer, Aircraft Environmental Support Office
Everett Douglas, Aircraft Environmental Support Office

8.3 FEDERAL AGENCIES CONTACTED

Bureau of Indian Affairs

Tribal Listings: Cold Springs Rancheria, Mission Indians Viejas Group of Capitan, Native American Heritage Commission, Santa Ynez Chumash Reservation, Table Mountain Rancheria

US Fish and Wildlife Service

John Bradley, Branch Chief, Carlsbad Field Office
Wayne White, Field Supervisor, Sacramento Field Office

National Park Service

Ralph Moore, Sequoia and Kings Canyon National Parks
William Tweed, Sequoia and Kings Canyon National Parks
Ernest Quintana, Joshua Tree National Park
Debbie Bird, Sequoia and Kings Canyon National Parks

8.4 LOCAL AGENCIES CONTACTED

Central Union High School District, El Centro

Marianne Terriquez

Central Union School District, Lemoore

Marilyn Lenhardt

City of Avenal, Public Works Department

Jerry Watson, Director

City of Brawley, Fire Department
Jesse Zendejas, Fire Captain

City of Brawley, Police Department
Henry Graham, Acting Chief

City of Brawley, Public Works Department
Alvin Smith, Chief Operator

City of El Centro, Fire Department
William Dubois, Battalion Chief

City of El Centro, Police Department
Jim Townsel, LCMDR, Investigative Division

City of El Centro, Public Works Department
Randy Hines, Wastewater Plant Supervisor

City of Hanford, Fire Department
Tim Ieronimo, Fire Marshall

City of Hanford, Planning Department
John Stowe

City of Hanford, Public Works Department
Robert Sisneroz, Waste Disposal Manager

City of Hanford, Police Department
David Scott, Administrative Sergeant

City of Hanford, Public Works Department
Clee Haley, Utilities Superintendent

City of Holtville, Fire Department
Carl Gronstedt, Fire Chief

City of Holtville, Police Department
John Jordan, Chief

City of Holtville, Public Works Department
Frank Garcia

City of Imperial, Fire Department
Fred Nippins

City of Lemoore, Fire Department
Fire Chief Dee Machado

City of Lemoore, Planning Department
Gloria Hobbs

City of Lemoore, Police Department
Chief Robert Carden

City of Lemoore, Public Works Department
Richard Pereira, Utilities Superintendent

El Centro Elementary School District, El Centro
Carla Rayon

Hanford Elementary School District, Hanford
Liz Simas

Hanford High School District, Hanford
Marina Martinez

Imperial County Sanitation
John Lau, Controller

Imperial County Sheriff's Department
Michael Hackett, Assistant Sheriff

Imperial Irrigation District
William Haley, Superintendent of Irrigation and Drainage
John Coltrane, Electrical Analyst

Island Union School District, Lemoore
Mary Jo Bernardo

Kings County, Fire Department
Len Chesmore

Kings County, Planning Department
Bill Zumwalt

Kings County, Sheriff's Department
William Landis, Assistant Chief

Kings County Waste Management Agency
Michael Adams, Executive Director

Lemoore Elementary School District, Lemoore
Barbara Richwine

Lemoore School District
Bill Miguel

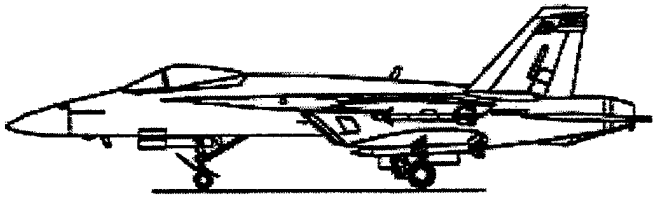
Lemoore Union School District, Lemoore
Carol Mayer

Pacific Bell
David Waugh

Pacific Gas & Electric (PG&E) Company
Scott Raiskup, Electrical Engineer

Seeley Union School District, Seeley
Sue Anderson

Southern California Gas Company
John Rees, Federal Account Manager



9.0 LIST OF PREPARERS

9.1	NAVY PERSONNEL	9-1
9.2	PRIME CONTRACTOR	9-2
9.3	SUBCONTRACTORS	9-3

CHAPTER 9
LIST OF PREPARERS

9.1 NAVY PERSONNEL

US Navy - EFA West
Sam Dennis
Surinder Sikand

US Navy – Commander Naval Air Force, Pacific Fleet
Capt. Tad Chamberlain
Cdr. Jeff Earl
Roger Newman
Andrew Harrison

US Navy – Commander Naval Base San Diego
William Crouse
Cdr. Erick Armstrong
Rene Trevino

US Navy – F/A-18E/F Fleet Introduction Team
Lt. Steven Thompson
Cdr. Phillip Tomkins

US Navy – NAS Lemoore
William O'Donnell

US Navy – NAF El Centro
Capt. Carlos Badger
Manny Patacsil

9.2 PRIME CONTRACTOR

Tetra Tech - San Francisco Office
180 Howard Street, Suite 250
San Francisco, California 94105

John E. King, CIH
MPH, Toxicology
Years of Experience: 18
(Program Director)

Karen Frye, AICP
BS, Political Economy of Natural Resources
Years of Experience: 10
(Program Manager)

Phyllis Potter, AICP
MA, Environmental Planning
Years of Experience: 18
(Project Manager)

Dean Amundson
MS, Environmental Policy
Years of Experience: 4
(Deputy Project Manager, Land Use and Airspace)

Edmund Bondoc
BA, Environmental Sciences
Years of Experience: 2
(Utilities and Services)

Kris Kolassa
BS, Biological Sciences
Years of Experience: 7
(Public Health and Safety, Hazardous Materials and Waste)

George Redpath
MS, Ecology
Years of Experience: 25
(Biological Resources)

Robert Sculley
MS, Ecology
Years of Experience: 22
(Air Quality, Noise)

Thomas Whitehead, RG
MS, Hydrology
Years of Experience: 12
(Hydrology and Surface Water Quality)

Randolph Varney
BA, Technical and Professional Writing
Years of Experience: 14
(Editor)

Terry Witherspoon
MCP, City Planning
Years of Experience: 8
(Aesthetics and Visual Resources)

Ann M. Zoidis
MS, Physiology and Behavioral Biology
Years of Experience: 12
(Biological Resources)

Tetra Tech – San Bernardino Office
348 W. Hospitality Lane, Suite 300
San Bernardino, California 92408

Felicia Bradfield, AICP
BS, Finance/Law
Years of Experience: 12
(Socioeconomics)

Susan Bupp
MA, Anthropology
Years of Experience: 21
(Cultural Resources)

Evelyn Chandler
BA, Anthropology/Sociology
Years of Experience: 6
(Cultural Resources)

Fred Hickman
MS, Economics
Years of Experience: 28
(Socioeconomics)

9.3 SUBCONTRACTORS

Dowling Associates, Inc.
180 Grand Avenue, Suite 995
Oakland, California 94612

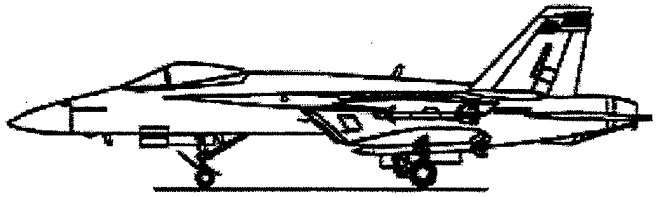
Alice Chen
MS, Transportation Engineering
Years of Experience: 6
(Traffic and Circulation)

Cheung Environmental Consulting
829 Key Route Boulevard
Albany, California 94706

Lori Cheung
BA, Environmental Sciences
Years of Experience: 10
(QA/QC)

Grassetti Environmental Consulting
1536 Scenic Avenue
Berkeley, California 94708

Richard Grassetti
MA, Geography (Emphasis on Water Resources)
Years of Experience: 14
(Hydrology and Surface Water Quality)



10.0 DISTRIBUTION LIST

10.0 DISTRIBUTION LIST 10-1

CHAPTER 10
DISTRIBUTION LIST

This distribution list includes elected officials, relevant federal, state, and local agencies, interested organizations and individuals, scoping meeting attendees, and libraries and media. All parties will receive notice of the Environmental Impact Statement (EIS) and the executive summary. Parties identified with an asterisk (*) in the "Comnt/# Copies" heading below commented on the draft EIS. Parties identified by a numeric value in the "Comnt/# Copies" heading received a complete copy of Volumes I and II of the final EIS. In most cases, individuals receiving complete copies of the final EIS attended scoping meetings or provided written comments incorporated into this document.

Comnt/# Copies	Title	First	Last	Organization	Branch	City	State
Federal Elected Officials							
	Honorable	George	Radanovich	US Congress	19th District	Fresno	CA
1	Honorable	Calvin	Dooley	US Congress	20th District	Hanford	CA
	Honorable	Bill	Thomas	US Congress	21st District	Visalia	CA
	Honorable	Mary	Bono	US Congress	44th District	Palm Springs	CA
	Honorable	Bob	Filner	US Congress	50th District	Chula Vista	CA
	Honorable	Gary	Condit	US Congress	House of Representatives	Merced	CA
	Honorable	Brad	Sherman	US Congress	House of Representatives	Woodland Hills	CA
	Honorable	Henry	Waxman	US Congress	House of Representatives	Los Angeles	CA
	Ms.	Victoria	Hight	US Congress	Representative Dooley's Office	Hanford	CA
	Senator	Barbara	Boxer	US Senate		San Francisco	CA
	Senator	Barbara	Boxer	US Senate		Fresno	CA
	Senator	Dianne	Feinstein	US Senate		San Francisco	CA
State Elected Officials							
*1	Honorable	Jim	Costa	California State Assembly	16th District	Fresno	CA
	Honorable	Cruz	Bustamante	California State Assembly	31st District	Fresno	CA
	Honorable	Jim	Battin	California State Assembly	80th District	Imperial	CA
	Ms.	Jennifer	Castro	California State Assembly	Representative Robert Prenter's Office	Hanford	CA
	Honorable	Bill	Jones	California State Assembly		Fresno	CA
	Honorable	Margaret	Snyder	California State Assembly		Madera	CA
	Honorable	Ken	Maddy	California State Senate	14th District	Fresno	CA

Comnt/# Copies	Title	First	Last	Organization	Branch	City	State
	Honorable	David	Kelley	California State Senate	37th District	Palm Desert	CA
	Honorable	Phil	Wyman	California State Senate		Tehachapi	CA
	Governor	Pete	Wilson	State of California	Office of the Governor	Sacramento	CA
Local Elected Officials							
				Advisory Council on Historic Preservation	Western Office of Project Review	Lakewood	CO
1	Mayor	Kelly	Granger	City of Avenal	Office of the Mayor	Avenal	CA
1				City of Brawley	Office of the Mayor	Brawley	CA
1				City of El Centro	Office of the Mayor	El Centro	CA
1	Mayor	Jim	Patterson	City of Fresno	Office of the Mayor	Fresno	CA
1	Mayor	Robert	Hill	City of Hanford	Office of the Mayor	Hanford	CA
1				City of Holtville	Office of the Mayor	Holtville	CA
1				City of Imperial	Office of the Mayor	Imperial	CA
1	Mayor	Dave	Simas	City of Lemoore	Office of the Mayor	Lemoore	CA
1				City of Westmoreland	Office of the Mayor	Westmoreland	CA
Federal Agencies							
	Director	Ronald	Anzalone	Advisory Council on Historic Preservation		Washington	DC
				Federal Aviation Administration		Sacramento	CA
				House Interior Committee	House Annex 1	Washington	DC
	Mr.	Kenneth	Hollingshead	National Marine Fisheries Service	Office of Protected Resources	Silver Spring	MD
	Regional Administrator	Hilda	Diaz-Soltero	National Marine Fisheries Service	Southwest Region	Long Beach	CA
	Associate Director	Denis	Galvin	National Park Service	Planning and Development	Washington	DC
1	Superintendent	Ernest	Quintana	National Park Service	Joshua Tree National Park	Twenty-Nine Palms	CA
	Chief	Jim	Benedict	National Park Service	Santa Monica Mountains Recreational Area	Agoura Hills	CA
	Mr.	Art	Eck	National Park Service	Santa Monica Mountains Recreational Area	Agoura Hills	CA
	Ms.	Judith	Meister	National Park Service	Santa Monica Mountains Recreational Area	Santa Monica	CA
1	Ms.	Debbie	Bird	National Park Service		Three Rivers	CA
*1	Wilderness Coordinator	Ralph	Moore	National Park Service		Three Rivers	CA
*1	Regional Director	John	Reynolds	National Park Service	Pacific West Field Area	Sacramento	CA
*1	Superintendent	Michael	Tollefson	National Park Service	Kings Canyon National Park	Three Rivers	CA
2				US Army Corps of Engineers	Sacramento District	Sacramento	CA
	Director			US Bureau of Indian Affairs	Field Office	Palm Springs	CA
	Superintendent			US Bureau of Indian Affairs	Southern California Area Office	Riverside	CA
	District Manager			US Bureau of Land Management	California Desert District	Riverside	CA
	Area Manager			US Bureau of Land Management	El Centro District	El Centro	CA
	Assistant Director	Maitland	Sharpe	US Bureau of Land Management	Resource Assessment and Planning	Washington	DC
				US Bureau of Land Management		Sacramento	CA
	External Affairs Officer	Bob	Walsh	US Bureau of Reclamation	Lower Colorado Regional Office	Boulder City	NV
	Area Manager	Rick	Martin	US Bureau of Reclamation	Southern California Area Office	Temecula	CA
	Environmental Specialist	Judy	Troast	US Bureau of Reclamation		Washington	DC

Comnt/# Copies	Title	First	Last	Organization	Branch	City	State
	Chief	T.J.	Granito	US Coast Guard	Environmental Protection Branch	Washington	DC
	Mr.	Steve	Jewett	US Department of Agriculture	Natural Resource Conservation Service	Somis	CA
				US Department of Commerce	National Oceanic & Atmospheric Admin. San Francisco Office	San Francisco	CA
				US Department of Commerce	National Oceanic & Atmospheric Admin. Sanctuary & Reserve Division SSMCIV	Silver Spring	MD
	Acting Director	Donna	Wieting	US Department of Commerce	National Oceanic & Atmospheric Admin., Office of Policy & Strategic Planning	Washington	DC
	Safety Manager	Richard	Green	US Department of Health and Human Services		Washington	DC
				US Department of Housing & Urban Dev.	Environmental Unit	Los Angeles	CA
18	Mr.	Terry	Martin	US Department of the Interior	Office of Environmental Policy & Compliance	Washington	DC
*9	Environmental Officer	Patricia	Port	US Department of the Interior	Office of Environmental Policy & Compliance	San Francisco	CA
	Mr.	Daniel	Leubecker	US Department of Transportation	Office of Technology Assessment	Washington	DC
	Mr.	Harvey	Riebel	US Department of Transportation		Longdale	CA
5	Director	Dick	Anderson	US Environmental Protection Agency	Office of Federal Activities	Washington	DC
*2	Chief	David	Farrel	US Environmental Protection Agency	Office of Federal Activities	San Francisco	CA
	Mr.	Bob	Pallarino	US Environmental Protection Agency	Region IX Air and Toxics Division	San Francisco	CA
	Director	Deanna	Weiman	US Environmental Protection Agency	Region IX Office of External Affairs	San Francisco	CA
	Mr.	Bob	Moyer	US Environmental Protection Agency	Region IX Office of Regional Counsel	San Francisco	CA
	Environmental Officer	Bill	Johnston	US Federal Aviation Administration	Western Pacific Region (AWP-532)	Longdale	CA
	Navy Rep.			US Federal Aviation Administration	Western Pacific Region (AWP-532)	Los Angeles	CA
	Mr.	Sandro	Amaglio	US Federal Emergency Management Agency	Region IX	San Francisco	CA
1				US Fish and Wildlife Service	Ecological Services	Sacramento	CA
1				US Fish and Wildlife Service	Fish and Wildlife Enhancement	West Carlsbad	CA
				US Fish and Wildlife Service	Sacramento Office Ecological Services	Sacramento	CA
*1	Assistant Field Supervisor	Sheryl L.	Barrett	US Fish and Wildlife Service	Ecological Services	Carlsbad	CA
	Refuge Manager			US Fish and Wildlife Service	Salton Sea National Wildlife Refuge	Calipatria	CA
	Ms.	Catherine	Clement	US Forest Service		San Francisco	CA
Military and Coast Guard							
	Chair	Jearaldine	Alex	Big Sandy		Auberry	CA
	Major	John	Romero	US Air Force	AF/XOOR, Room 5C168	Washington	DC
	Mr.	Ted	McCall	US Air Force	Deputy Assistant Secretary	Washington	DC
	Mr.	Philip	Lammi	US Air Force	Environmental Office Western Region	San Francisco	CA
1	Major	Rick	Hale	US Air Force		Edwards Air Force Base	CA

Comnt/# Copies	Title	First	Last	Organization	Branch	City	State
				US Army Corps of Engineers	Los Angeles District Regulatory Branch	Los Angeles	CA
	LTC		Daniels	US Coast Guard	Pollution Contingency Planner	Long Beach	CA
*1	Mr.	Dennis	Robertson	US Navy	NAF El Centro Fire Department	El Centro	CA
*1	Mr.	Ethan	Scott	US Navy	NAF El Centro Fire Department	El Centro	CA
*1	Mr.	Richard	Wilson	US Navy	NAF El Centro Fire Department	Imperial	CA
	LT	Ed	Sewester	US Navy	NAF El Centro, Public Works Officer	El Centro	CA
	Captain	Deak	Childress	US Navy	NAS Lemoore	Lemoore	CA
	Mr.	Dennis	McGrath	US Navy	NAS Lemoore	Lemoore	CA
1	Ms.	Tina	Evans	US Navy	NAWC Weapons Divison	China Lake	CA
1	Mr.	Patrick	VanHooser	US Navy	NAWC Weapons Divison	China Lake	CA
1	Mr.	John	O'Gara	US Navy	NAWC Weapons Divison	China Lake	CA
	Captain	Paul	McMahon	US Navy	NAS Lemoore	Lemoore	CA
	COL	Louis	Van Mullen, Jr.	Vandenberg Air Force Base	Environmental Management	Vandenberg AFB	CA
	Manager	Allan	Naydol	Vandenberg Air Force Base	Natural Resources	Vandenberg AFB	CA
Tribal Agencies							
	Executive Officer	Michael	Fischer	Coastal Conservancy		Oakland	CA
	Chair	Frank	Lee	Cold Springs Rancheria		Tollhouse	CA
	Chair	Clarence	Brown	Mission Indians Viejas Group of Capitan	Grande Band Tribal Headquarters	Alpine	CA
	Executive Secretary	Larry	Myers	Native American Heritage Commission		Sacramento	CA
	Chair	Elaine	Schneider	Santa Ynez Chumash Reservation	Tribal Elders Council	Santa Ynez	CA
	Chair	Lewis	Barnes	Table Mountain Rancheria		Friant	CA
State Agencies							
	Chief	James	Morgester	CA Air Resources Board	Compliance Division	Sacramento	CA
				CA Air Resources Board	EIR Regional Impact Division	Sacramento	CA
1	Executive Director	Mark	Delaplaine	CA Coastal Commission		San Francisco	CA
	Analyst	Jim	Raives	CA Coastal Commission		San Francisco	CA
	Mr.	David	Johnson	CA Department of Boating & Waterways		Sacramento	CA
	Mr.	John	Schmidt	CA Department of Conservation	Wildlife Conservation Board	Sacramento	CA
	Director	Michael	Byrne	CA Department of Conservation		Sacramento	CA
	Mr.	David	Hammond	CA Department of Ed., Sc, & Environ.		Sacramento	CA
				CA Department of Fish and Game	Region 4	Fresno	CA
1	Regional Manager	Patricia	Wolf	CA Department of Fish and Game	Region 5	Long Beach	CA
1	President	Frank	Boren	CA Department of Fish and Game		Sacramento	CA
	Director			CA Department of Fish and Game		Sacramento	CA
	Chief	David	Spath	CA Department of Health Services	Environmental Health Division	Sacramento	CA
	Mr.	James	Stratton	CA Department of Health Services	Health Hazard Assessment	Sacramento	CA
				CA Department of Health Services	Toxic Substances Control Division, Region 3	Glendale	CA
	Ms.	Karen	Collins	CA Department of Parks and Recreation	Historic Preservation Office	Sacramento	CA
*1	Ms.	Cherilyn	Widell	CA Department of Parks and Recreation	Historic Preservation Office	Sacramento	CA

Comnt/# Copies	Title	First	Last	Organization	Branch	City	State
1	Chief	Richard	Rayburn	CA Department of Parks and Recreation	Resource Management Division	Sacramento	CA
*1	District Superintendent	David H.	Van Cleve	CA Department of Parks and Recreation	Colorado Desert District	Borrego Springs	CA
				CA Department of Parks and Recreation	Salton Sea State Recreation Area	North Shore	CA
				CA Department of Transportation	District 6	Fresno	CA
				CA Department of Transportation	District 7	Los Angeles	CA
	Division Director			CA Department of Transportation	Division of Aeronautics	Sacramento	CA
	Executive Director	Robert	Remen	CA Department of Transportation		Sacramento	CA
	Mr.	Randall	Brown	CA Department of Water Resources	Environmental Services Office	Sacramento	CA
	Mr.	Fredrick	Moss	CA Environmental Protection Agency	Department of Toxic Substances Control	Sacramento	CA
				CA Environmental Protection Agency	Public Participation and Education	Long Beach	CA
	Mr.	James	Strock	CA Environmental Protection Agency		Sacramento	CA
1				CA Office of Planning and Research	Clearing House	Sacramento	CA
	Grants Coordinator	Terry	Rivasplata	CA Office of Planning and Research		Sacramento	CA
	Secretary	Douglas	Wheeler	CA Resources Agency		Sacramento	CA
				Regional Water Quality Control Board	Central Valley Region	Fresno	CA
	Environmental Specialist	Lauma	Jurkevics	Regional Water Quality Control Board	Surveillance Unit	Monterey Park	CA
	Mr.	Harry	Schueller	Regional Water Resources Control Board	Division of Clean Water Program	Sacramento	CA
	Mr.	Juan	Salazar	State of California	California Conservation Corps,	Porterville	CA
				State Water Resources Control Board	Division of Water Quality	Sacramento	CA
Regional Agencies							
	Ms.	Julie	Linxwiler	Fresno County	Department of Public Works and Development Services	Fresno	CA
1	Development Services Manager	Gail	Miller	Fresno County	Department of Public Works and Development Services	Fresno	CA
				Imperial County	Air Pollution Control District	El Centro	CA
	Chair			Imperial County	Board of Supervisors	El Centro	CA
	Director			Imperial County	Parks and Recreation Department	El Centro	CA
1	Planning Director	Jurg	Heuberger	Imperial County	Planning and Building Department	El Centro	CA
1	County Supervisor	Dean	Shores	Imperial County		El Centro	CA
	Mr.	Michael	Remington	Imperial Irrigation District		Imperial	CA
	General Manager	Charles	Shreves	Imperial Irrigation District		Imperial	CA
*1	Chairman	Lee	Lockhart	Kings County	Board of Supervisors	Hanford	CA
1	Mr.	John S.	Lehn	Kings County	Job Training Office	Hanford	CA
1	Ms.	Allison M.	Picard	Kings County	Office of County Administrator	Hanford	CA
1	Mr.	Ken	Marvin	Kings County	Office of the Sheriff	Hanford	CA

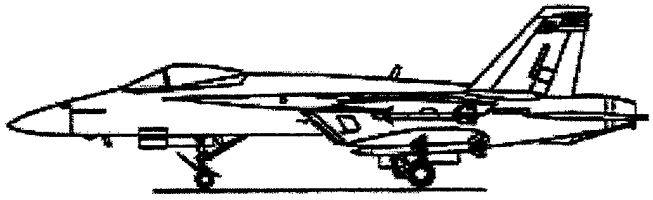
Comnt/# Copies	Title	First	Last	Organization	Branch	City	State
				Kings County	Waste Management Authority	Hanford	CA
	Mr.	Jim	Edwards	Kings County		Hanford	CA
1	County Aministrative Officer	Larry	Spikes	Kings County	County Administrative Office	Hanford	CA
	Supervising Environmental Planner	Dean	Mitchell	San Joaquin Valley	Unified Air Pollution Control District	Fresno	CA
	Program Supervisor	Steve	Smith	South Coast Air Quality Management District		Diamond Bar	CA
	Mr.	Philip	Fernando	Southern CA Association of Governments		Los Angeles	CA
	Ms.	Maggie	Idle	Southern CA Association of Governments		Los Angeles	CA
Water Management Agencies							
				Lakeside Irrigation Water District		Hanford	CA
	Mr.	Gerhardt	Hubner	Regional Water Quality Control Board	Los Angeles Region	Monterey Park	CA
	Mr.	Michael	Lyons	Regional Water Quality Control Board	Los Angeles Region	Monterey Park	CA
	Mr.	Frank	Royer	United Water Conservation District		Santa Paula	CA
*1	General Manager	David	Orth	Westlands Water Districts		Fresno	CA
1	Chief of Operations	Steve	Ottomoeller	Westlands Water Districts		Fresno	CA
Local Agencies							
	City Manager	Melisa	Harriman	City of Avenal	Office of the City Manager	Avenal	CA
	Director	Jonathan	Demsky	City of Avenal	Utilities Department	Avenal	CA
	President			City of Brawley	Chamber of Commerce	Brawley	CA
				City of Brawley	Office of the City Manager	Brawley	CA
	President			City of Calexico	Chamber of Commerce	Calexico	CA
				City of Calexico	Office of the City Manager	Calexico	CA
	President			City of Calipatria	Chamber of Commerce	Calipatria	CA
	Mr.	James	Flournoy	City of Calipatria	City Hall	Calipatria	CA
				City of Corcoran		Cocoran	CA
1	Executive Vice President	Cathy	Kennerson	City of El Centro	Chamber of Commerce	El Centro	CA
		MC	Wyman	City of El Centro	Chamber of Commerce	El Centro	CA
1	Mr.	Robert	Zimmer	City of El Centro	Chamber of Commerce	El Centro	CA
	President			City of El Centro	Chamber of Commerce	El Centro	CA
				City of El Centro	Office of the City Manager	El Centro	CA
*1	Executive Director	Stebbins	Dean	City of Fresno	Chamber of Commerce	Fresno	CA
	President			City of Fresno	Chamber of Commerce	Fresno	CA
	President			City of Hanford	Chamber of Commerce	Hanford	CA
1	City Manager	Jan	Reynolds	City of Hanford	Office of the City Manager	Hanford	CA
1	Ms.	Barbara	McGurdy	City of Hanford		Hanford	CA
	President			City of Holtville	Chamber of Commerce	Holtville	CA
				City of Holtville	Office of the City Manager	Holtville	CA
	President			City of Imperial	Chamber of Commerce	Imperial	CA
				City of Imperial	Office of the City Manager	Imperial	CA
*	Executive Director			City of Lemoore	Chamber of Commerce	Lemoore	CA
*1	City Manager	Steven L.	Froberg	City of Lemoore		Lemoore	CA
1	Ms.	Lynda	Lahodny	City of Lemoore	Chamber of Commerce, Downtown Revitalization Committee	Lemoore	CA
1	Mr.	Bobby	Lee	City of Lemoore	Chamber of Commerce, Governmental Affairs Committee	Lemoore	CA

Comnt/# Copies	Title	First	Last	Organization	Branch	City	State
*1	Mr.	Jeffrey L.	Levinson	City of Lemoore	Chamber of Commerce, Governmental Affairs Committee	Lemoore	CA
1		John W.	Luis	City of Lemoore	City Council	Lemoore	CA
1		Ed	Martin	City of Lemoore	City Council	Lemoore	CA
	City Manager	Allen	Goodman	City of Lemoore	Office of the City Manager	Lemoore	CA
	Director	Verma	Nakul	City of Lemoore	Planning and Community Development	Lemoore	CA
1	Mr.	Bill	Bowen	City of Lemoore	Planning Commission	Lemoore	CA
School Districts							
1	Mr.	John	Jones	Akers School		Lemoore	CA
	Ms.	Marianne	Terriquez	Central Union High School District	Planning Department	El Centro	CA
1	Superintendent		Carlson	Central Union School District		Lemoore	CA
	Ms.	Marilyn	Lenhardt	Central Union School District		Lemoore	CA
*1	Ms.	Joan	Gusinow	Central Union School District		Lemoore	CA
1	Ms.	Carla	Rayon	City of El Centro	Elementary School District	El Centro	CA
1	Mr.	Bill	Miguel	City of Hanford	High School Board	Hanford	CA
1	Mr.	Richard	Rayburn	City of Lemoore	Union Elementary School District	Lemoore	CA
1		J.	Perkins	Hanford Elementary School District		Hanford	CA
1	Ms.	Liz	Simas	Hanford Elementary School District		Hanford	CA
*1	Ms.	Nancy	White	Hanford Elementary School District		Hanford	CA
1	Ms.	Marina	Martinez	Hanford High School District		Hanford	CA
1	Superintendent	Thomas	Bates	Island Union School District		Lemoore	CA
1	Superintendent	Idanna	Aaron	Lemoore Elementary School District		Lemoore	CA
	Ms.	Barbara	Richwine	Lemoore Elementary School District		Lemoore	CA
1	Tri-Counties District Manager	Bill	Black	Lemoore High School		Lemoore	CA
	Ms.	Carol	Mayer	Lemoore Union School District		Lemoore	CA
1	Mr.	Bob	Marsenau	Nuetra School		Lemoore	CA
	Ms.	Sue	Anderson	Seeley Union School District		Seeley	CA
1	Superintendent	Dave	Watson	Seeley Union School District		Seeley	CA
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	Mr.	Charles	Imbrecht	California Energy Commission		Sacramento	CA
				California Environment Trust		San Francisco	CA
				California Farm Bureau Federation		Sacramento	CA
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	Mr.	R. Mitch	Covington	Capistrano Homes		Pinedale	CA
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*1	Mr.	Steve	Tabor	Desert Survivors		Oakland	CA
	Ms.	Anna	Harlowe	Ecology Center of Southern California		Los Angeles	CA
	Mr.	Dan	Silver	Endangered Habitats League		Los Angeles	CA
	Ms.	Andrea	Durbin	Friends of the Earth		Washington	DC
	Mr.	Ron	Bottorff	Friends of the Santa Clara River		Newbury Park	CA
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				Pacific Gas & Electric	Service Planning	Lemoore	CA
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	Mr.	Joel	Schwartz	Rand Corp.		Santa Monica	CA
	Ms.	Grace	Potorti	Rural Alliance for Military Accountability		Reno	NV
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		Curt	Uptain	San Joaquin Valley Endangered Species Recovery Planning Program		Fresno	CA
	Ms.	Misty	Gay	Santa Catalina Conservancy		Avalon	CA
		Terry	Tamminen	Santa Monica Bay Keeper		Marina del Rey	CA
		Gar	Goodson	Save Our Coastline 2000		Palos Verdes	CA
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	Mr.	John	Rees	Southern California Gas Company		Downey	CA
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*1		Larry and Barbara	Tidball			Long Beach	CA
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		Hallen	Wagenvoord			Oakland	CA
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				KABC Channel 7	Public Announcements	Los Angeles	CA
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				KJOP 1240 AM	Public Announcements	Lemoore	CA
		Noe	Diaz	KQVO Spanish Radio	Public Announcements	Calexico	CA
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	Ms.	Judy	Finney	Lemoore Advance		Lemoore	CA



11.0 GLOSSARY AND INDEX

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CHAPTER 11
GLOSSARY AND INDEX

11.1 GLOSSARY

100-year flood zone	Land area having a one percent chance of being flooded during a given year.
Advisory Council on Historic Preservation	A 19-member body appointed, in part, by the President of the United States to advise the President and Congress, and to coordinate the actions of federal agencies on matters relating to historic preservation, to comment on the effects of such actions on historic and archaeological resources, and to perform other duties as required by law (Public Law 89-655; 16 USC 470).
Aesthetics	Referring to the perception of beauty.
Air installation compatible use zones (AICUZ)	A concept for achieving compatible land use around a military airfield. The AICUZ program recommends land uses that will be compatible with noise levels, accident potential, and flight clearance requirements associated with military airfield operations. Community noise equivalent levels (CNELs), shown as noise contour lines on AICUZ maps, prescribe what kind of land uses may occur at certain noise levels. Similarly, accident potential zones (APZs) limit the types of land uses that may occur below the zone.
Air traffic control authorized airspace (ATCAA)	ATCAAs are similar to MOAs in that they are used to accommodate aircraft maneuvering in airspace adjacent to the restricted areas and are broader and higher than the restricted areas. ATCAAs are used to afford military aircraft the opportunity for flight above 18,000 MSL.
Airfield waivers	When imaginary surface violations become necessary for safe navigation, a waiver is obtained from the NAVAIR. This allows a facility to erect structures that serve as navigational aids that extend above the imaginary surface.
Airport control zone	Normally a five-mile radius circle center on the airport.

Ambient air quality standards	Standards established on a state or federal level that define the limits for airborne concentrations of designated criteria pollutants (nitrogen dioxide, sulfur dioxide, carbon monoxide, ozone, lead), to protect public health with an adequate margin of safety (primary standards) and public welfare, including plant and animal life, visibility, and materials (secondary standards).
Aquifer	A layer of underground sand, gravel, or spongy rock in which water collects.
Archaeological site	Any location where humans have altered the terrain or discarded artifacts. The location of past cultural activity; a defined space with more or less continuous archaeological evidence.
Archaeology	A scientific approach to the study of human ecology, cultural history, and cultural process, emphasizing systematic interpretation of material remains.
Arterial	A roadway from which local routes branch.
Artifact	Any product or human cultural activity; more specifically, any tools, weapons, artworks, etc., found in archeological contexts.
Asbestos	A carcinogenic substance formerly used widely as an insulation material by the construction industry; often found in older buildings.
Assemblage	The complete inventory of artifacts from a single, defined archaeological unit (such as a stratum or component).
Attainment area	An area which meets the National Ambient Air Quality Standards for a criteria pollutant under the Clean Air Act or meets state air quality standards.
A-weighted decibel (dBA)	A number representing the sound level which is frequency weighted according to a prescribed frequency response established by the American National Standards Institute (ANSI-S1.4-1971) and accounts for the response of the human ear.
Before Present (BP)	Dating convention for cultural resources chronologies, defined as X years before present. Present is usually defined as 1950.
Best-management practices (BMPs)	Includes schedule of activities, prohibition of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff spillage or leaks, sludge or waste disposal, or drainage from raw material storage.
Burial	Human remains disposed of by interment. Burials may be *simple* (containing the remains of one person) or *complex* (containing the remains of two or more individuals), *primary* (including the remains as originally interred), or *secondary* (where a reinternment follows a temporary disposal elsewhere).

Capacity (transportation)	The maximum rate of flow at which vehicles can be reasonably expected to traverse a point or uniform segment of a lane or roadway during a specified time period under prevailing roadway, traffic, and control conditions.
Capacity (utilities)	The maximum load a system is capable of carrying under existing service conditions.
Clean Air Act (CAA)	The CAA legislates that air quality standards set by federal, state, and county regulatory agencies establish maximum allowable emission rates and pollutant concentrations for sources of air pollution on federal and private property. Also regulated under this law is proper removal and safe disposal of asbestos from buildings other than schools.
Clean Water Act (CWA)	The CWA is the major federal legislation concerning improvement of the nations water resources. It provides for development of municipal and industrial wastewater treatment standards and a permitting system to control wastewater discharges to surface waters. The act contains specific provisions for regulation of ships' wastewater and disposal of dredge spoils within navigable waters. Section 404 of the act regulates disposal into waters of the United States, including wetlands.
Climate	The prevalent or characteristic meteorological conditions (and their extremes) of any given location or region.
Community Environmental Response Facilitation Act (CERFA)	A 1992 amendment to CERCLA, CERFA expedites the identification of uncontaminated real property within closing facilities which offer the greatest opportunity for reuse and redevelopment.
Community noise equivalent level	Noise compatibility level established by California Administrative Code, Title 21, Section 5000. The 24-hour average A-weighted sound level with a 5 dB weighting added to levels occurring between 10:00 PM and 7:00 AM
Comprehensive Environmental Response, Compensation, And Liability Act (CERCLA)	CERCLA, also known as Superfund, was enacted in 1980 to ensure that a source of funds is available to clean up abandoned hazardous waste dumps, compensate victims, address releases of hazardous materials, and establish liability standards for responsible parties. The act also requires creation of a National Priorities List which sets forth the sites considered to have the highest priority for cleanup under Superfund.
Contamination	The degradation of naturally occurring water, air, or soil quality either directly or indirectly as a result of human activities.
Council on Environmental Quality (CEQ)	Established by NEPA, the CEQ consists of three members appointed by the President. CEQ regulations (40 CFR 1500-1508, as of July 1, 1986) describe the process for implementing NEPA, including preparation of environmental assessments and environmental impact statements, and timing and extent of public participation.

Cultural	(1) The nonbiological and socially transmitted system of concepts, institutions, behavior, and materials by which a society adapts to its effective natural and human environment; (2) Similar or related assemblages of approximately the same age from a single locality or district, thought to represent the activities of one social group.
Cultural history	The archeological sequence of cultural activity through time, within a defined geographic space or relating to a particular group.
Cultural resources	Prehistoric and historic districts, sites, buildings, objects, or any other physical evidence of human activity considered important to a culture, subculture, or a community for scientific, traditional, religious, or any other reason. Native American resources are sites, areas, and materials important to Native Americans for religious or heritage reasons. Resources may include prehistoric sites and artifacts, contemporary sacred areas, traditional use areas (e.g., native Plant habitat), and sources for materials used in the production of sacred objects and traditional implements.
Cumulative impacts	The combined impacts resulting from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions, regardless of which agency or person undertakes them.
Day-night average sound level (Ldn)	The 24-hour average-energy sound level expressed in decibels, with a 10 decibel penalty added to sound levels between 10:00 PM and 7:00 AM to account for increased annoyance due to noise during the night.
Decibel (dB)	A unit of measurement on a logarithmic scale which describes the magnitude of a particular quantity of sound pressure or power with respect to a standard reference value.
Developed	Said of land, a lot, a parcel, or an area that has been built upon, or where public services have been installed prior to residential or commercial construction.
Dredging	Removal of mud from the bottom of water bodies using a scooping machine.
Easement	An interest in land owned by another that entitles its holder to a specific limited use
Effluent	Waste material discharged into the environment.
Endangered species	A species that is threatened with extinction throughout all or a significant portion of its range.
Endangered Species Act (ESA)	The ESA requires federal agencies to determine the effects of their actions on endangered species and their critical habitats.
Environmental impact statement (EIS)	A document required of federal agencies by NEPA for major projects or legislative proposals significantly affecting the environment. A tool for decision making, the EIS describes the positive and negative effects of the undertaking and lists alternative actions.

Equivalent noise levels (Leq)	Equivalent noise levels are used to develop single-value descriptions of average noise exposure over various periods of time.
Ethnohistory	The description of indigenous human groups and their behavior prior to and during contact with Euro-Americans. Ethnohistorical data was obtained by direct observation and/or by transcription of statements by living persons in the late 1800s and early 1900s, and in some cases, projected into the past.
Fault	Fracture in earth's crust accompanied by a displacement of one side of the fracture with respect to the other and in a direction parallel to the fracture.
Feasibility study (FS)	The feasibility study identifies and evaluates all applicable site cleanup alternatives. For most sites, a long list of alternatives are possible. A risk assessment is performed as part of the study to quantify the level of risk to the public and environment posed by the site. Often, the risk assessment determines which alternative is selected for final remediation. Each alternative is evaluated for effectiveness in protecting human health and the environment, ease of implementation, and overall cost. Typically, the remedial investigation and FS are performed concurrently.
Feature	A large, complex artifact or part of a site such as a hearth, cairn, housepit, rock alignment, or activity area.
Federal airways	Federal airways are corridors for civilian air traffic. These airways are shown with a "V" or a "J" and a number designation. "V" is for vector corridors that cover elevations up to 18,000 feet above MSL, while "J" is for jet corridors that cover elevations over 18,000 feet above MSL.
Ground water	Water within the earth that supplies wells and springs.
Hazard Ranking System (HRS)	This system provides a uniform method of scoring or ranking of the potential risk of a facility site where a hazardous substance has been present. The EPA developed the HRS to prioritize their cleanup efforts. The EPA evaluates the draft HRS packages and proposes any facilities scoring over 28.5 or higher for inclusion on the National Priorities List (NPL). Facilities which are listed on the NPL receive the highest priority.
Hazardous material	A substance or mixture of substances that poses a substantial present or potential risk to human health or the environment. Any substance designated by the EPA to be reported if a designated quantity of the substance is spilled in the waters of the United States or if it is otherwise released into the environment.
Hazardous waste	A waste or combination of wastes which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either cause or significantly contribute to an increase in mortality or an increase in serious irreversible illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. Regulated under RCRA.

Historic district	National Register of Historic Places designation of a geographically defined area (urban or rural) possessing a significant concentration, linkage, or continuity of sites, structures, or objects united by past events or aesthetically by plan of physical development.
Historic/history	A period of time after the advent of written history dating to the time of first Euro-American contact in an area. Also refers to items primarily of Euro-American manufacture.
Holocene	The time since the end of the Pleistocene epoch, characterized by the absence of large continental or Cordilleran ice sheets and the extinction of large mammalian lifeforms. Generally considered to be the last 10,000 years.
Imaginary surfaces	The maximum safe height of buildings, towers, poles, and other possible obstructions to air navigation are defined by imaginary surfaces. Imaginary surfaces are another way to describe clearances for air navigation. These surfaces are invisible planes that radiate, at various increasing heights from the runway or helicopter pad. The FAA considers any terrain or man-made objects that extend above the imaginary surface an obstruction. Imaginary surfaces include the primary surface, the approach-departure surface, the inner horizontal surface, the conical surface, the outer horizontal surface, and transitional surfaces.
Impacts	An assessment of the meaning of changes in all attributes being studied for a given resource; an aggregation of all the adverse effects, usually measured using a qualitative and nominally subjective technique.
Infrastructure	The basic installations and facilities on which the continuance and growth of a locale depend (roads, schools, power plants, transportation, and communication systems).
Installation Restoration Program (IRP)	A program established by the Department of Defense to meet requirements of CERCLA of 1980 and SARA of 1986 which identifies, assesses, and cleans up or controls contamination from past hazardous waste disposal practices and hazardous material spills.
Level of Service (LOS)	In transportation analysis, a qualitative measure describing operational conditions within a traffic stream and how they are perceived by motorists and/or pedestrians. Usually given a letter grade from A to F, with A being free-flow; E, capacity; and F, forced-flow. Factors considered in LOS analyses include speed, travel time, traffic interruptions, freedom of maneuver, safety, driving comfort, and convenience. In public services, a measure describing the amount of public services available to community residents, generally expressed as the number of personnel providing service per 1,000 population.
Liquefaction	The transformation during an earthquake of unconsolidated, water-saturated sediment into a liquid form.

Long-term	Impacts that would occur over an extended period of time, whether they start during the construction or operations phase. Most impacts from the operations phase are expected to be long term since program operations essentially represent a steady-state condition (i.e., impacts resulting from actions that occur repeatedly over a long period of time). However, long-term impacts could also be caused by construction activities if a resource is destroyed or irreparably damaged or if the recovery rate of the resource is very slow.
Marsh	A type of wetland that does not accumulate appreciable peat deposits and is dominated by herbaceous vegetation. Marshes may be either fresh or salt water and tidal or nontidal.
Master plan	Land use on military bases is planned and documented in a Master Plan. A Master Plan is used in the short-term to site new construction projects, but also serves as a guide for achieving long-term development objectives. The purpose of a Master Plan is to provide realistic and orderly planning and to ensure logical and efficient use and development of base facilities and real estate.
Migratory Bird Treaty Act	This act prohibits the taking or harming of a migratory bird, its eggs, nests, or young without the appropriate permit.
Military operating area (MOA)	MOAs exist to accommodate aircraft maneuvering in airspace adjacent to the restricted areas and are broader and higher than the restricted areas. MOAs can extend up to 18,000 feet above MSL, but not beyond. Non-hazardous military training activities such as air combat maneuvers, air intercepts, and aerobatics are conducted in the MOAs.
Military training routes (MTRs)	MTRs are shown by a visual route (VR) or instrument route (IR) designation. MTRs are often low altitude routes and are used for access to or from MOAs or for cross-country flight practice. Essentially, MTRs are airways for military aircraft.
Mitigation	A method or action to reduce or eliminate program impacts.
Multi-family housing	Townhouse or apartment units that accommodate more than one family though each dwelling unit is only occupied by one household.
National Environmental Policy Act (NEPA)	Public Law 91-190, passed by Congress in 1969, established a national policy designed to encourage consideration of the influence of human activities on the natural environment. NEPA also established the Council on Environmental Quality. NEPA procedures require that environmental information be made available to the public before decisions are made.
National Historic Preservation Act (NHPA)	The NHPA protects cultural resources. Section 106 of the act requires a federal agency to take into account the potential effect of a proposed action on properties listed on or eligible for listing on the National Register of Historic Places.

National Pollution Discharge Elimination System (NPDES)	The NPDES is a provision of the Clean Water Act which prohibits discharge of pollutants into waters of the United States unless a special permit is issued by the EPA or state.
National Priorities List (NPL)	A list of sites (federal and state) where releases of hazardous materials may have occurred and may cause an unreasonable risk to the health and safety of individuals, property, or the environment.
National Register of Historic Places (NRHP)	A register of districts, sites, buildings, structures, and objects important in American history, architecture, archaeology, and culture, maintained by the Secretary of the Interior under the authority of Section 2(b) of the Historic Sites Act of 1935 and Section 101(a)(1) of the National Historic Preservation Act of 1966, as amended.
Native American Graves Protection and Repatriation Act (NAGPRA)	NAGPRA defines the ownership and control of Native American human remains and associated funerary objects discovered or recovered from federal or tribal land.
Native Americans	Used in the collective sense to refer to individuals, bands, or tribes who trace their ancestry to indigenous populations of North America prior to Euro-American contacts.
Native vegetation	Plant life that occurs naturally in an area without agricultural or cultivational efforts. It does not include species that have been introduced from other geographical areas and have become naturalized.
Natural gas	A natural fuel containing primarily methane and ethane that occurs in certain geologic formations.
Noncontributing resource	A resource (e.g., a building) that is located within the boundaries of a National Register District but that does not contribute to the eligibility of the district. A "non-contributing" building or structure is not eligible for the National Register of Historic Places.
Nonnative species	Species that have invaded or been introduced into an area.
Paleo-Indian	Prehistoric hunter-gatherer populations characterized by efficient adaptations to terminal Pleistocene environments in which small bands exploited megafauna such as mammoth.
PCB-contaminated equipment	Equipment which contains a concentration of PCBs from 50 to 449 ppm or greater. Disposal and removal are regulated by the EPA.
Peak hour	The hour of highest traffic volume on a given section of roadway between 7:00 AM and 9:00 AM or between 4:00 PM and 6:00 PM.
Permit	An authorization, license, or equivalent control document to implement the requirements of an environmental regulation.

Pleistocene	The last 1.6 million years of geological history, marked by repeated glaciation and the first indication of social life in human beings.
Polychlorinated biphenyls (PCBs)	Any of a family of industrial compounds produced by chlorination of biphenyl. These compounds are noted chiefly as an environmental pollutant that accumulates in organisms and concentrates in the food chain with resultant pathogenic and teratogenic effects. They also decompose very slowly.
Potable water	Water that is suitable for drinking.
Prehistoric/Prehistory	The period of time before the written record, and before Euro-Americans entered an area.
Prehistory	The archeological record of nonliterate cultures; the cultural past before the advent of written records.
Preliminary assessment (PA)	The PA identifies areas of potential contamination and evaluates each area to determine if a threat to human health or the environment exists. A PA report is developed from readily available information such as past inventory records, aerial photographs, employee interviews, existing analytical data, and a site visit. A PA may recommend no further action, additional work, or a removal action.
Radon	A colorless, naturally occurring, radioactive, inert gaseous element formed by radioactive decay of radium in soil or rocks.
Record of Decision (ROD)	The document prepared under the federal government that documents the reasoning behind the decision.
Recycling	The process of minimizing the generation of waste by recovering usable products that might otherwise become waste.
Region of influence	For each resource, the region affected by the proposed action or alternatives and used for analysis in the affected environment and impact discussion.
Remedial action	During the remedial action (RA) phase, the selected cleanup technology is implemented. RA can be as simple as soil excavation or as complicated as a complete ground water treatment system that operates for many years. Remedial action work plans for long term remediations will include Operation and Maintenance (O&M) plans. O&M efforts continue until the cleanup is complete.
Remedial investigation (RI)	This investigation is performed to more fully define the nature and extent of the contamination at a site and evaluate possible methods of cleaning up the site. During the investigation, ground water, surface water, soil, sediment, and biological samples are collected and analyzed to determine the type and concentration of each contaminant. Samples are collected at different areas and depths to help determine the spread of contamination.

Removal actions	In the event of an immediate threat or potential threat to human health or the environment, a short term mitigating or cleanup action may be implemented. The goal of the removal action is to isolate the contamination hot spot and its source from all biological receptors. Usually, removal actions do not completely clean up a site, and additional remediation steps are required.
Resource Conservation and Recovery Act (RCRA)	RCRA was enacted in 1976 as the first step in regulating the potential health and environmental problems associated with hazardous waste disposal. RCRA and the regulations developed by EPA to implement its provisions provide the general framework of the national hazardous waste management system, including the determination of whether hazardous wastes are being generated, techniques for tracking wastes to eventual disposal, and the design and permitting of hazardous waste management facilities.
Restricted use airspace	Restricted use airspace is an area of limited dimensions wherein military activities must be confined because of their nature or wherein limitations may be imposed upon aircraft operations that are not a part of those activities.
Runoff	The noninfiltrating water entering a stream or other conveyance channel shortly after a rainfall event.
Safe Drinking Water Act (SDWA)	The SDWA establishes the amount of concentrated contaminants allowable in public drinking water. The SDWA also reviews federal agencies which maintain public water supply or contribute to groundwater contamination following all applicable requirements issued by the state.
Seismicity	Relative frequency and distribution of earthquakes.
Short-term	Transitory effects of the proposed program that are of limited duration and are generally caused by construction activities or operations start-up.
Significance	The importance of a given impact on a specific resource as defined under the Council on Environmental Quality regulations.
Single-family housing	A conventionally built house consisting oaf a single dwelling unit occupied by one household.
Site discovery	A site is an area that has or has had the potential for a hazardous substance release. A single facility may contain several sites to be studied. Potential sites are occasionally discovered by searching through records or during construction projects.
Site inspection (SI)	An inspection conducted after a preliminary assessment when additional information is needed to evaluate the site. The collection and analysis of soil, sediment, and surface or ground water samples may help determine the need for further study. The site inspection collects any information needed for hazard ranking. The SI may recommend a site for no action, further study, or an immediate removal action.

Soil	A natural body consisting of layers or horizons of mineral and/or organic constituents of variable thickness and differing from the parent material in their morphological, physical, chemical, and mineralogical properties and biological characteristics.
Soil types	A category or detailed mapping unit used for soil surveys based on phases or changes within a series (e.g. slope, salinity).
Solid waste management	Supervised handling of waste materials from their source through recovery processes to disposal.
State Historic Preservation Officer (SHPO)	The official within each state, authorized by the state at the request of the Secretary of the Interior, to act as liaison for purposes of implementing the National Historic Preservation Act.
Stratigraphy	The study of cultural and natural strata or layers in archeological and geological deposits, particularly with the aim of determining the relative age of strata.
Superfund Amendments and Reauthorization Act (SARA)	SARA was enacted in 1986 to increase the Superfund to $8.5 billion, modify contaminated site cleanup criteria scheduling, and revise settlement procedures. It also provides a fund for leaking underground storage tank cleanups and a broad, new emergency planning and community right to know program.
Surface water	All water naturally open to the atmosphere and all wells, springs, or other collectors which are directly influenced by surface water.
Threatened species	Plant and wildlife species likely to become endangered in the foreseeable future.
Toxic	Harmful to living organisms.
Toxic Substances Control Act (TSCA)	TSCA provides authority to test and regulate chemicals to protect human health. Substances regulated under TSCA include asbestos and PCBs.
Traffic, peak hour	The highest number of vehicles observed to traverse a section of roadway during 60 consecutive minutes.
Tribelet	The basic autonomous, self-governing, and independent sociopolitical group in aboriginal California; an aggregation of several villages under the authority of a single chief.
US Environmental Protection Agency	The independent federal agency established in 1970 to regulate federal environmental matters and oversees the implementation of federal environmental laws.
Visual Resources	Natural and man-made features that constitute aesthetic qualities and values.
Waters of the United States	Waters that are subject to Section 404 of the Clean Water Act. These include both deep water aquatic habitats and special aquatic sites, including wetlands.

Wetlands	Areas that are inundated or saturated with surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil. This classification includes swamps, marshes, bogs, and similar areas. Jurisdictional wetlands are those wetlands that meet the vegetation, soils, and hydrology criteria under normal circumstances (or meet the special circumstances as described in the US Army Corps of Engineers, 1987 wetland delineation manual where one or more of these criteria may be absent) and are a subset of Waters of the United States.
Zoning	The division of a municipality into districts for the purpose of regulating land use, types of buildings, required yards, necessary off-street parking, and other prerequisites to development. Zones are generally shown on a map and the text of the zoning ordinance specifies requirement for each zoning category.

11.2 INDEX

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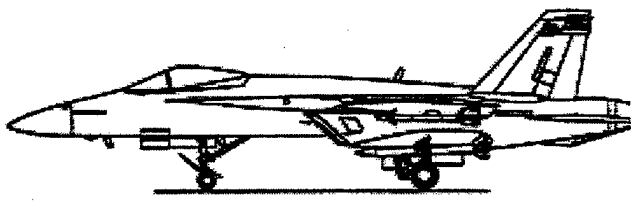
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12.0 RESPONSE TO COMMENTS

Response to Comments on the Development of Facilities to Support Basing of the Pacific Fleet F/A-18E/F Aircraft on the West Coast of the United States Draft Environmental Impact Statement

INTRODUCTION

The draft EIS for the West Coast basing of the F/A-18E/F aircraft was circulated for public and agency review from December 12, 1997, to February 2, 1998. The Navy held public hearings on January 7, 1998, in Lemoore, California, and on January 8, 1998, in El Centro, California, to provide the public and concerned parties with an opportunity to comment on the content and accuracy of the draft EIS. In addition, written comments were accepted throughout the review period.

In accordance with the National Environmental Policy Act (NEPA), the final EIS provides the responses to comments on the draft EIS (40 CFR § 1503.4 [1994]). This chapter of the EIS includes a list of agencies, organizations, and individuals commenting on the draft EIS, comment letters, and the responses to the substantive environmental issues raised in the comments. The responses to comments raised at the public hearings also are included.

No new significant impacts were identified, nor was there an increase in the severity of previously identified impacts.

Readers should refer to the List of Acronyms in the Table of Contents of this document for terms that are not spelled out.

	Letter Reference	Organization/Agency/Individual
Federal Agencies	1	US Department of Interior
	2	US National Park Service
	3	US Fish and Wildlife Service
	3A	US Fish and Wildlife Service
	4	US Environmental Protection Agency
State Agencies	5	California State Senator Jim Costa
	6	State of California, Office of Historical Preservation
	7	State of California, Department of Parks and Recreation
	7A	State of California, Department of Parks and Recreation
Regional/Local	8	Kings County Board of Supervisors
	9	City of Lemoore
	10	Hanford Elementary School District
	11	Central Union School District
	12	Westlands Water District
Organizations	12A	Lemoore District Chamber of Commerce
	12B	Fresno Chamber of Commerce
	13	Wilderness Watch
	14	Sierra Club (Toiyabe)
	15	Sierra Club (National)
	16	Sierra Club (Tehipite)
	17	Sierra Club (Angeles)
	17A	Sierra Club (Sierra Nevada Ecoregion Task Force)
	18	California Wilderness Coalition
	19	The Wilderness Society
	20	Tulare County Audubon Society
	21	Desert Survivors
	22	High Sierra Hikers Association
	23	Natural Resources Defense Council
	24	Desert Protective Council
	25	National Parks and Conservation Association
	26	The Gas Company
	26A	The Lemoore Advance
Individuals	27	Barbara Baldock
	28	Thomas Suk
	29	Lorraine L'Herrou
	30	Kris Lindstrom
	31	Peter Moritz
	32	Allan Pendley
	33	Steve Schramm
	34	Jack Shook
	35	Larry and Barbara Tidball
	36	Arthur Unger

	Letter Reference	Organization/Agency/Individual
Individuals (cont'd)	37	Howard Whitaker
	38	Matthew Clark
	39	Carl McInnes, Roland Dinsmoor, and Marvin Coleman
	40	Frank and Marlene Bucy
	41	Florence Lesur
	42	Rick Clark
	43	Matt Yoksh
	44	Frank Junga
	45	Paul Atkinson
	46	Salvatore Castagnola
	47	Julie Martinez
	48	Carter Edmiston
	49	R. Scott Lamb
	50	David P. Sanderson
	51	Richard Scott Kay
	52	Robert M. Owens
	53	Joseph Maloney
	54	Katherine Korotaj
	55	Jonathon Haner
	56	Anthony Doetor
	57	Steven Haldrege
	58	Bruno Giannini
	59	Laura A. Pilewski
	60	Ron Scheumacher
	61	Lynda Lahodny
	62	George Durkee
	63	Willis & Melba Simms
	64	Nina Weisman
	65	Elizabeth Hubert
	66	Guthrie Hardesty
	67	Gerald Cole
	68	Alia Selke
	69	Robert Pilewski
	70	Juan Cullum
	71	Mary Ellen Beard
Public Hearing Transcript	72	Public Hearing, Lemoore, California, January 7, 1998
	73	Public Hearing, El Centro, California, January 8, 1998

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
600 Harrison Street, Suite 515
San Francisco, California 94107-1376

January 23, 1998

ER 97/724

Mr. Surinder Sikand
US Navy-Naval Facilities Engineering Command, Engineering Field Activity West
900 Commodore Drive
San Bruno, California 94066-5006

Dear Mr. Sikand,

The Department of the Interior has reviewed the Draft Environmental Impact Statement (DEIS) for the Development of Facilities to Support Basing US Pacific Fleet F/A-18E/F Aircraft on the West Coast of the United States; Fresno, Kings, and Imperial counties, California, and has no comments to offer. 1-A

Thank you for the opportunity to comment on this document.

Sincerely,

Patricia Sanderson Port
Regional Environmental Officer

cc: Director, OEPC (w/orig. incoming)
Regional Director, FWS, Region I

- Letter 1 –
United States Department of the Interior
Response to Comment

1-A Thank you for reviewing the draft EIS.

United States Department of the Interior

NATIONAL PARK SERVICE
Pacific West Field Area
600 Harrison Street, Suite 600
San Francisco, California 94107-1372

IN REPLY REFER TO:

L7619

FEB 02 1998

Commanding Officer
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 94066-5006
Attn: Mr. Surinder Sikand, Code 18511

Dear Mr. Sikand:

The National Park Service (NPS) has reviewed the *Draft Environmental Impact Statement (DEIS) for Development of Facilities to Support Basing U.S. Pacific Fleet F/A-18 E/F Aircraft on the West Coast of the United States*. The Proposed Action has the potential to adversely impact the visitor experience and park resources in Death Valley, Joshua Tree, and Sequoia and Kings Canyon National Parks. Each of these parks, as well as wilderness areas and protected public lands administered by the Bureau of Land Management (BLM) and the U.S. Forest Service (USFS), underlie intensively used military training routes.

I. SUMMARY

The DEIS's Proposed Action acknowledges that increases in aircraft assigned to Lemoore Naval Air Station (NAS) will result in additional overflights. Given the location of these four national parks, the NPS anticipates that the Proposed Action will increase the number of aircraft from Lemoore NAS that will overfly these park areas, all of which contain designated wilderness lands. Implementation of the Proposed Action will exacerbate the existing overflights problem within these national parks and wilderness areas and adversely impact park resources and the visitor experience. 2-A

Yet, the DEIS neglected to discuss any of the affected national parks or other protected areas in the Affected Environment section, and it failed to identify and quantify, in the Environmental Consequences section, the adverse impacts that implementation of the Proposed Action would cause to these parks and wilderness areas. The DEIS should be revised and recirculated for public comment so the public has the opportunity to address these impacts. 2-B

II. THE DEIS SHOULD BE REVISED SO IMPACTS OF OVERFLIGHTS ON FOUR NATIONAL PARKS AND OTHER PUBLIC LANDS CAN BE EVALUATED

Although the DEIS identifies aircraft noise as a potential impact of the Proposed Action, it only addresses areas immediately adjacent to Lemoore NAS, not impacts to national park visitors or resources. The Proposed Action will increase overflight activity in four national parks (Death Valley, Joshua Tree, Sequoia, and Kings Canyon), Anza-Borrego State Park, and numerous BLM and USFS wilderness areas. The U.S. Military has a self-imposed 3,000 foot altitude restriction in place for major portions of the R-2508 training complex over Death Valley, Sequoia and Kings Canyon National Parks. Compliance with this restriction is lax, however, and numerous low altitude violations have occurred and continue to occur over these national parks and wilderness areas. 2-C 2-D

Information gathered by the NPS clearly indicates that noise from low-level military overflights provides a significant disruption to our visitors' wilderness experience. Low-level military overflights above these parks result in visitor complaints each year. These overflights compromise visitor safety by startling climbers and horses and their riders, potentially causing injury, and impact the visitor experience by disrupting natural quiet.

Death Valley National Park is home to Badwater, the lowest elevation in the United States, at -282 feet. Military pilots have formed the "Below Sea Level Club," whose members fly above Badwater at an altitude that is actually below sea level. This causes great irritation to visitors present at the time. Death Valley's major concern, however, is with safety. This past spring, there was a near-miss incident in which an Air National Guard jet passed a NPS contract helicopter with a separation of only 200 feet. The park Superintendent sent a formal complaint to Edwards Air Force Base regarding this incident but has received no response with a specified corrective course of action to date. 2-E

VR-1257, a 454-mile military visual training route originating in Lemoore NAS and ending in southern California, passes over Joshua Tree National Park. Seven of the nine park campgrounds are along this VR-1257 route, and frequent visitor complaints are received from these campgrounds.

During public scoping for Sequoia and Kings Canyon National Parks' *Wilderness Management Plan* in 1995, these parks received more than 100 letters complaining about military overflights. Hikers, climbers, skiers, and equestrians have been startled by low-level F-16 overflights. The new F-18s are even louder.

Safety and the impacts of noise on visitor experiences are important NPS concerns which need to be included in the DEIS. Therefore, the Proposed Action should be revised to include an

objective analysis of impacts to these parks and to the other affected public land areas. Appropriate means to mitigate these impacts should also be identified.

Moreover, a description of the existing noise baseline in these areas should be included in the No Action alternative so that the public and affected federal and state agencies can assess the incremental impact that would be generated by implementation of the Proposed Action. Once these changes are made, the DEIS should be recirculated for public review. 2-F

III. THE NAVY'S NEPA PROCESS FOR THE DEIS SHOULD BE REVISED

In addition to our concerns regarding the lack of disclosure of impacts to national park and other public lands within the DEIS, we believe the public involvement process used to produce the document failed to fully comply with the legislated mandate and the spirit of the National Environmental Policy Act (NEPA). Federal agency and public comments raised in scoping sessions were not addressed in the DEIS. 2-G

For example, the NPS raised a number of concerns during the scoping meeting at Lemoore High School on April 28, 1997, and submitted written comments on May 15, 1997. (These comments are enclosed.) The DEIS did not address these comments nor was the NPS listed as a concerned agency in the document. The Navy also failed to consult with the NPS during preparation of the Draft EIS, and copies of the DEIS were not sent to those who had previously requested them unless a personal phone call was made to Lemoore NAS. Finally, when the NPS met with Navy representatives on January 7, 1998, the Navy justified allowing even more overflights as "only an incremental increase and not much of an increase over the status quo." These events strongly imply that the Navy is not seriously considering the effect of its actions on national parks. 2-H 2-I 2-J

One other aspect of the public involvement process that we would like to address relates to the Navy's existing EIS schedule. At the public hearing on January 7, 1998, in the City of Lemoore Council Chambers, representatives from Lemoore NAS stated that "the public comment period on the DEIS would end on February 2, 1998,... and The *Final Environmental Impact Statement* (FEIS) would be issued on March 6, 1998." Given the significance of NPS concerns, we urge you to reevaluate your time frame to allow for inclusion of national park and other public land impacts in the DEIS, and to re-open the public comment period for review of the additional information. 2-K

IV. NPS POLICIES REGARDING NATURAL QUIET

Protecting natural resources, including natural quiet, and enabling visitors to experience these resources in a manner that is unimpaired by human activity is a NPS mandate, spelled out in the NPS Organic Act of 1916, 16 U.S.C. §§ 1 and 2-4, the General Authorities Act of 1978,

16 U.S.C. § 1a-1, and again in the Wilderness Act of 1964, 16 U.S.C. § 1131 *et seq.* The United States Congress has consistently recognized the need to preserve the national parks in their natural state.. The General Authorities Act states:

> ...The authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress.

According to the legislative history of this provision, "the Secretary [of the Interior] has an absolute duty which is not to be compromised, to fulfill the mandate of the 1916 Act to take whatever actions and seek whatever relief as will safeguard the units of the National Park System."

In the Wilderness Act of 1964, Congress established the National Wilderness Preservation System which described wilderness areas as follows:

> A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man...an area without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation...
>
> ...Except as specifically provided for in the Act...there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport...

The vast majority of land in Death Valley National Park, approximately 3 million acres, became designated wilderness on October 31, 1994 after the passage of the California Desert Protection Act (P.L. No. 103-433). Joshua Tree National Park encompasses 585,400 acres of wilderness, designated either under P.L. No. 94-567 (October 20, 1976) or P.L. No. 103-433 (October 31, 1994). Some 736,980 acres of Sequoia and Kings Canyon National Park were designated as part of the National Wilderness Preservation System under the California Wilderness Act of 1984. Therefore, the protections of the Wilderness Act apply to over 4.3 million acres of land in these four parks.

In addition, official NPS policy clearly articulates the value of natural quiet as a resource.

The *NPS Management Policies* (NPS 1988) states:

> The natural resources and values that the Park Service protects...include plants, animals, water, air, soils, topographic features, geologic features, paleontological resources, and aesthetic values, such as scenic vistas, natural quiet, and clear night skies...The National Park Service will strive to preserve the natural quiet and the natural sounds associated with the physical and biological resources of the parks....Activities causing excessive or unnecessary unnatural sounds in and adjacent to parks, including low-altitude aircraft overflights, will be monitored, and action will be taken to prevent or minimize unnatural sounds that adversely affect park resources or values or visitors' enjoyment of them (4:1, 4:18). (emphasis added)

NPS-77, the *Natural Resource Management Guideline* (1990) addresses the issue of protecting aesthetic values. This guideline defines "aesthetic value" as:

> ...a value, in the framework of natural resource management in the NPS, that is attributed by people to natural, unmanipulated conditions and is perceived through the senses---by seeing, hearing, touching, smelling, and tasting (p. 204).

In 1995, the Department of the Interior submitted a report to Congress entitled *Report on Effects of Aircraft Overflights on the National Park System*. It clearly states:

> The National Park Service manages "natural quiet" as a park resource. This responsibility is based in current public law, in explicit park management policy, and in visitors' reactions to park experiences. Just as parks contain many *tangible* features, such as animals, plants, waters, geological features, historic buildings and archeological sites, they have intangible qualities as well. These qualities include solitude, space, scenery, clear night skies, sounds of nature and natural quiet. Such qualities are increasingly rare in much of America. The scarcity of these resources and their importance to the park experience also makes them valued by park visitors.

On Earth Day, April 22, 1996, President Clinton issued an Executive Memorandum for the Heads of Executive Departments and Agencies, stating:

> Aircraft flying at low altitudes over national parks can, if not properly managed, mar the natural beauty of the parks and create significant noise problems as well. The intrusion of such aircraft can interfere with wildlife (including threatened and endangered species), cultural resources and ceremonies, and visitors' enjoyment of parks, including the ability to experience natural sounds without interruption from mechanical noise. Several parks face overflight problems...it is important to the future of parks to address these problems quickly and in a fair and reasonable manner.

In accordance with these laws and policies, the Navy's DEIS must systematically address the effects of its proposed activities on these national parks and wilderness areas. Parks and wilderness areas offer a variety of unique, pristine sounds not found in most urban or suburban environments. They also offer a complete absence of the noise present in most urban and suburban areas. Together, these two conditions provide a very special dimension to a park visitor's experience. The quiet afforded in natural park settings can be awe-inspiring. The NPS strives to protect opportunities to experience these sounds of nature--something we Americans rarely experience in our normal daily routines. 2-L

V. CONCLUSION

The NPS feels that the DEIS is inadequate because it does not identify and quantify the impacts to park lands (including the more than 4.3 million acres of national park wilderness beneath military training routes used by Lemoore NAS) and to the visitor experience. Nor has the Navy identified measures to mitigate these impacts. 2-M

The NPS and the U.S. Military both have missions mandated by Congress. We both protect this country's extremely important resources. When our missions appear to conflict, we must be committed to working closely together. *NPS Management Policies* (1988) provides direction to the NPS to work with the Department of Defense on overflight issues:

> Since the National Park Service has no direct authority or jurisdiction over airspace above parks, it will actively seek the assistance of the Federal Aviation Administration and appropriate agencies of the Department of Defense to resolve overflight concerns and to prevent, eliminate, or minimize the derogation of park resources and values associated with overflight activity.

We have, in good faith, attended working group meetings with the military to try to resolve our overflight issues at the local level. Since 1978, the NPS has consistently participated in a coordinated effort between the Department of Defense and land managers affected by the R-2508 Complex. However, we have not come to a satisfactory resolution to date. The current situation of repeated violations of the military's overflight altitude restriction is unacceptable. 2-N

In keeping with the direction found in *NPS Management Policies*, we seek to work with the Navy, on a local level, to resolve our overflight concerns and avoid the derogation of park resources and values now associated with military training operations. We believe that our two agencies can work together on this significant and controversial issue. We request that you have your representatives contact us as soon as possible regarding addressing park impacts in the DEIS. 2-O

If you have questions or comments regarding our concerns please contact Mike Tollefson, Superintendent, Sequoia and Kings Canyon National Parks, 209-565-3341; Ernest Quintana, Superintendent, Joshua Tree National Park, 760-367-6376; Dick Martin, Superintendent, Death Valley National Park 760-786-2331; or me at 415-427-1304.

Sincerely,

John Reynolds
Regional Director, Pacific West Region

Enclosure

cc:
Superintendent, Death Valley National Park
Superintendent, Sequoia and Kings Canyon National Parks
Superintendent, Joshua Tree National Park
Solicitor's Office, San Francisco

United States Department of the Interior

NATIONAL PARK SERVICE
Kings Canyon National Park
Sequoia National Park
Three Rivers, California 93271-9700

IN REPLY REFER TO:

L7619

May 15, 1997

Commanding Officer
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 94066-5006
Attn: Mr. Surinder Sikand, Code 18511

Dear Sir:

Sequoia and Kings Canyon National Parks wish to provide the following scoping comments regarding the proposed West Coast basing of the F/A-18 E/F aircraft at Lemoore Naval Air Station:

1. We are concerned that an increase in aircraft will result in an increase in training missions over these parks. The Department of Defense has a self-imposed restriction of 3000 feet AGL over this portion of the R-2508 complex, yet we continue to document the flying of military aircraft in the National Park Service portion of the Kern Canyon in contravention of the existing altitude restrictions. The number of reported violations by military aircraft (observations of *extremely* low-level flying made by trained and experienced backcountry rangers) over the last ten years ranges for a low of 36 reported incidents in 1986 to a high of 85 incidents in 1995. We would like to know what steps will be taken to assure compliance with this restriction, and what steps will be taken to prevent the increase in number of aircraft stationed at Lemoore from exacerbating this problem.

2. Approximately 85% of these parks has been designated by Congress as Wilderness. As described in the Wilderness Act of 1964, with this designation comes an expectation by the visiting public for "outstanding opportunities for solitude." In 1996, wilderness visitation in the Sequoia-Kings Canyon Wilderness exceeded 95,000 visitor days. The noise from low-flying military aircraft causes significant disruption to our visitors' wilderness experience. Each year, the public complains about the noise from overflights. We would like to know what steps will be taken to reduce noise levels generated by F-18 aircraft from the current levels produced by existing military aircraft now flying over these parks.

3. Visitor safety and the safety of our helicopter pilots and staff have been compromised by low military overflights in the past. In 1983 and 1986, there were near-misses with our park helicopter. In 1983, our park helicopter was driven into the ground from the downdraft of a military jet; in 1986 a military jet flew within 40-50 feet of our park ship at 200 feet AGL. Such inadvertent occurrences as part of military training missions are unacceptable. We would like to know what steps will be taken to prevent similar occurrences if the F-18 is based at Lemoore.

Hikers, climbers, skiers and equestrians have been startled by the noise created by low-level military (F-16) overflights. What assurances can you provide that there will not be a "startle effect" when the (more powerful) F-18 flies above 3000 ft? What will Lemoore do to prevent this "startle effect" from jeopardizing visitor safety and causing injury to those on the ground, particularly to those on horseback?

4. While both of our agencies have missions designated by Congress, we must work closely together when these missions appear to conflict. We recognize that the Department of Defense has a valid mission, and we expect similar recognition of our agency's mission and purpose. We believe there is common ground and we wish to remain actively involved in resolving issues of mutual concern at the local level.

We cannot support an increase in aircraft at Lemoore without seeing convincing evidence that these concerns will be addressed. In over 10 years of monitoring military overflights above these parks, there has been little improvement. Our visiting public deserves better.

Thank you for addressing these concerns.

Sincerely,

/S/ SCOTT M. RUESCH

FOR

Michael J. Tollefson
Superintendent

cc: Chief Ranger
Wilderness Coordinator

DBird:db:tgb

- Letter 2 –
National Park Service
Response to Comments

2-A As stated in the EIS, the proposed action would increase the number of aircraft stationed at NAS Lemoore or NAF El Centro and, as stated in tables 2-4 and 2-8, there would be an increase in the number of sorties flown from either installation. Aircraft stationed at either NAS Lemoore or NAF El Centro would use the R-2508 Complex, which overlies portions of Sequoia, Kings Canyon and Death Valley national parks, as well as other wilderness areas, and the VR-1257 MTR, which passes over Joshua Tree National Park and Anza-Borrego Desert State Park. Aircraft currently stationed at NAS Lemoore and the proposed new F/A-18E/F aircraft also would be required to use established stereo transit routes between NAS Lemoore and the R-2508 Complex to reach training areas within the R-2508 Airspace Complex. These transit routes also pass over Sequoia and Kings Canyon national parks.

While the draft EIS did not specifically discuss overflight of the identified national parks, Table 4-27 does present peak noise levels for flyover events at different power settings and altitudes. These noise levels are applicable to areas beyond the immediate vicinity of either air station, including national parks beneath flight paths or training areas.

Discussion and analysis of potential impacts of the proposed action on sensitive resource areas, beyond the immediate vicinity of the alternative air stations, such as national park and wilderness areas, has been added in the final EIS. A description of sensitive land uses beneath the R-2508 Complex, stereo transit routes, and the relevant MTRs and current usage by aircraft at each of the alternative installations is presented in Section 3.1, Land Use and Airspace. Changes in usage and compatibility with the prescribed uses of these military airspaces under the proposed action are evaluated in Section 4.1, Land Use and Airspace.

The current noise conditions and the potential effects of the proposed action on areas beneath these airspaces is described and assessed in sections 3.7 and 4.7, Noise. These sections provide detailed analysis of peak flyover noise events in the R-2508 Complex, along the stereo transit routes, and along VR-1257 at different altitudes and power settings.

2-B As discussed above in the response to comment 2-A, the EIS has been revised to include a discussion and evaluation of potential impacts to national parks and wilderness areas from the proposed action. An additional 30-day public review period follows the publication of the final EIS, at which time additional comments may be received.

2-C As described in the response to comment 2-A above, the proposed action at either installation would increase usage of the R-2508 Complex and VR-1257. In addition, aircraft stationed at NAS Lemoore must also use the established stereo transit routes between NAS Lemoore and R-2508. The transit routes between NAS Lemoore and the R-2508 Complex, the R-2508 Airspace Complex, and the VR-1257 MTR lie above portions of Sequoia, Kings Canyon, Death Valley, and Joshua Tree National Parks. Aircraft flying over national parks and wilderness areas must maintain at least 3,000 feet AGL to minimize and avoid affects on noise sensitive areas unless the aircraft is within special use airspace or an MTR. This 3,000-foot altitude restriction applies to the transit routes between NAS Lemoore and R-2508; however, the R-2508 Complex, a special use airspace, and the VR-1257 MTR are exempt from this altitude restriction. Discussion of the altitude restrictions in these airspaces also has been added to Section 3.1 of the final EIS.

In order to reach the R-2508 Complex, aircraft from NAS Lemoore must fly east over the Sierra, along flight routes between NAS Lemoore and fixed navigation points at the boundary of R-2508 (see figures 3-2 and 3-3 in the final EIS). Navy aircraft typically enter the R-2508 Complex at one of two fix points (Kiote or Swoop) and exit the R-2508 Complex to return to NAS Lemoore from the other fix point. A third fix point (Mitel) located north of the Kiote fix point is used primarily by the Fresno Air National Guard. In addition, a fourth fix point (Fangg), near the northwestern corner of R-2508, has been proposed by the Navy, R-2508 CCB, and Fresno Air National Guard, and FAA approval is currently pending. The Fangg fix point is proposed primarily to limit interference between aircraft entering R-2508 at Mitel and Kiote and aircraft operating within R-2508. If approved, the Fangg fix point would be used by aircraft from both NAS Lemoore and the Fresno Air National Guard.

Navy aircraft transit the routes to R-2508 at altitudes of 19,000 to 23,000 feet msl under positive FAA control by Oakland ARTCC and are visible to FAA radar. Once inside the R-2508 Airspace Complex, aircraft are under the control of the High Desert Terminal Radar Approach Control (TRACON) and are subject to the established policies of the R-2508 Joint Policy and Planning Board (JPPB).

Aircraft flying to R-2508 from NAS Lemoore operate at cruise power until reaching R-2508 where training operations that may require military power begin. For an F/A-18E/F aircraft flying at cruise power along flight corridors between NAS Lemoore and the R-2508 Complex, peak noise levels would be about 79 dBA over the highest ridgelines, and about 71 to 72 dBA at ground elevations between 9,000 and 10,000 feet. Peak overflight noise levels would be less than 65 dBA for ground elevations between 6,000 and 7,000 feet. Given the brief duration of flyover event noise levels, aircraft operating at a cruise power setting would not produce an unusually disturbing noise event.

Once the aircraft cross the crest of the Sierra they enter the R-2508 Complex and are mostly over national forest land. Upon entering the R-2508 Complex, aircrew training may begin and the High Desert TRACON may assign aircraft to climb to specific altitudes or to drop to altitudes of less that 3,000 feet AGL. Aircraft within R-2508 are subject to the flight restrictions of the R-2508 Complex which require that aircraft shall maintain a minimum altitude of 3,000 feet AGL and 3,000 feet lateral distance from Sequoia and Kings Canyon National Parks, the portion of the John Muir Wilderness Area within the boundaries of Sequoia and Kings Canyon national parks, and the 1977 boundaries of Death Valley National Monument and the Domeland Wilderness Area (US Navy 1997o). Additional areas of Death Valley National Park and the John Muir Wilderness Area, other wilderness areas, and other public lands within R-2508 are not designated in the *R-2508 User's Handbook* as sensitive areas and are not subject to the 3,000-foot AGL flight restriction. See Figure 3-2 in the final EIS for the national park and wilderness areas subject to this altitude restriction.

Within R-2508 it is not possible to detect all violations of the 3,000 AGL altitude restriction due to radar limitations. As discussed in the R-2508 Environmental Baseline Study (excerpted in Appendix H of the final EIS), complaints of altitude violations that cannot be verified by radar are presumed to be violations if there is a lack of a deniable argument.

Aircraft flying within the R-2508 Complex may use the military power setting. F/A-18E/F aircraft flying at a military (full power) setting 3,000 feet AGL would produce a peak overflight noise of about 100 dBA. Peak overflight noise levels would be about 87 dBA for aircraft at a military power setting flying more than 10,000 feet AGL. F/A-18E/F aircraft flying within 10,000 feet of ground level at a military power setting are likely to produce a disturbing noise event for

noise-sensitive land uses, such as residential areas, national and state parks, or wilderness areas. Flights within 10,000 feet of ground level may occur over areas that are within the airspace boundaries of the R-2508 Complex, including national parks and wilderness areas.

Phase 1 of the proposed action will increase flight operations by military aircraft within the R-2508 Complex by about 19.5 percent over current levels. In general, it takes a doubling of noise source activity to produce a 3 dBA increase in noise levels. A 19.5 percent increase in flight activity (see the response to comment 2-F) will have a minor effect (less than 1 dBA) on overall noise levels within national parks and wilderness areas that underlie the R-2508 Complex. The frequency of individually disturbing overflight events probably will increase proportionately with the increase in overall flight operations. Use of the R-2508 Complex by NAS Lemoore aircraft would reach a maximum at the end of Phase 1 of the proposed action (between 2004 and 2010) would reduce the number of NAS Lemoore aircraft sorties to the R-2508 Complex as an existing F/A-18C/D FRS squadron is reduced in size from 36 aircraft to 10 aircraft. By the end of Phase 2, annual military aircraft sorties in the R-2508 Complex would be about 8.1 percent higher than in 1997.

VR-1257 is a designated low-level training route and, as such, is exempt from the Navy's 3,000-foot AGL altitude restriction. The permitted flight altitude within VR-1257 is specified for each segment but is permitted down to 200 feet AGL in places. Over Joshua Tree National Park, the Navy has a self-imposed minimum altitude of 1,500 feet AGL. Flight above 1,500 feet AGL is prohibited due to the route restrictions and potential conflicts with other FAA-designated flight routes. At this altitude, aircraft flying at an 85 percent power setting would produce a peak noise level of 97 dBA. Although this is likely to produce disturbing noise events, the proposed action would not measurably affect land beneath the route since use of VR-1257 would increase by only approximately 50 sorties per year or 1 sortie per week.

2-D The R-2508 Complex is a designated special use airspace which is exempt from Navy regulation OPNAVISNT 8710.Q requiring aircraft to remain at least 3,000 feet AGL above national parks and wilderness areas. Specific flight restrictions are instead established by the R-2508 Complex JPPB and set forth in the *R-2508 User's Handbook.* The *R-2508 User's Handbook* states that flight operations within the R-2508 Complex are prohibited below 3,000 feet AGL over Sequoia and Kings Canyon national parks, the portion of the John Muir wilderness within the boundaries of Sequoia and Kings Canyon national parks, the 1977 boundaries of the former Death Valley National Monument, and the 1977 boundaries of the Domeland Wilderness Area. (Figure 3-2 in the EIS). Other specific land uses, such as airports, towns, roads, and commercial enterprises, are specified in the *R-2508 User's Handbook* as areas subject to altitude restriction or avoidance. Additional areas of Death Valley National Park and the John Muir Wilderness Area, other wilderness areas, and other public lands within the R-2508 Complex are not designated in the *R-2508 User's Handbook* as sensitive uses and, therefore, are not subject to this altitude restriction. See the discussion of overflight of national parks and wilderness areas in Section 3.1, Land Use and Airspace.

Complaints from the public about low flying aircraft within the R-2508 Complex are addressed by the R-2508 Central Coordinating Facility (CCF) through an established process that is discussed in Section 3.1 of the EIS. The R-2508 Environmental Baseline Study indicates that in 1995 CCF received 113 complaints from the public about low-level flights within the R-2508 Complex, a third of which were verified non-violations (see Appendix H). This number of complaints represents 0.32 percent of current military sorties in R-2508. If it were assumed that all complaints related to aircraft from NAS Lemoore, the number of complaints would represent about 1.14 percent of the total flights from NAS Lemoore.

The Navy agrees that low-level flights in violation of altitude restrictions are unacceptable and is taking steps to curtail them. Using materials supplied by the National Park Service, the Navy has established a program to brief its pilots on the importance of maintaining 3,000 feet AGL over national park and wilderness areas that are subject to this restriction. Appropriate disciplinary measures also will be taken for any confirmed violations of established flight restrictions.

The Navy is working with other branches of the military that use R-2508, the National Park Service, and other interested parties to address this issue. The Navy and CCF are in an on-going dialogue with the National Park Service to address the issues associated with aircraft overflight.

2-E As discussed in the response to comment 2-D above, actual violations of altitude restrictions are rare; however, the Navy is taking steps to respond to concerns about low-level flights and to further curtail them. The R-2508 Airspace Complex is designed and managed to provide a designated operating area for Navy and other military aircraft. Although the airspace is primarily for military use, it also must be safe for others in and below the airspace. Navy operations in the area are conducted with the safety of its pilots and people in the surrounding area as the primary factor. The *R-2508 User's Handbook* restricts overflight of sensitive areas, such as population centers or airports, and limits certain operations, such as refueling or supersonic operations, to specific areas. Low-level operations may be conducted within the R-2508 Complex, except over the national park and wilderness areas designated in the *R-2508 User's Handbook* (see response to comment 2-D above and additional text in Section 3.1 of the final EIS for discussion of these areas). Low-level flight operations are also conducted along designated MTRs, such as VR-1257.

The EIS has been expanded to include a discussion of noise concerns arising from the proposed action. As indicated in the response to comment 2-C, noise impacts from F/A-18E/F overflights would be expected when aircraft operate within 10,000 feet of ground level at a military power setting. Flights within 10,000 feet of ground level may occur over areas that are within the airspace boundaries of the R-2508 Complex, including portions of some national park and wilderness areas in the R-2508 Complex that do not have designated flight restrictions, and Joshua Tree National Park beneath the VR-1257 MTR (see response to comment 2-D above or text added to Section 3.1 of the final EIS).

Phase 1 of the proposed action would increase flight operations by military aircraft within the R-2508 Complex by about 19.5 percent over current levels. In general, it takes a doubling of noise source activity to produce a 3 dBA increase in noise levels. A 19.5 percent increase in flight activity (see the response to comment 2-F) will increase overall noise levels within national park and wilderness areas by less than 1 dBA. The frequency of individually disturbing overflight events probably will increase proportionately with the increase in overall flight operations. Use of the R-2508 Complex by NAS Lemoore aircraft would reach a maximum at the end of Phase 1 of the proposed action. Phase 2 of the proposed action (between 2004 and 2010) would reduce the number of NAS Lemoore aircraft sorties to the R-2508 Complex as an existing F/A-18C/D FRS squadron is reduced in size from 36 aircraft to 10 aircraft. By the end of Phase 2, annual military aircraft sorties in the R-2508 Complex would be about 8.1 percent higher than in 1997. This minor increase in flight activity would not produce a noticeable increase in noise levels over the affected national parks or wilderness areas.

The existence of the "Below Sea Level Club" cannot be confirmed; however, flight below 3,000 feet AGL in this area of Death Valley National Park would violate R-2508 altitude restrictions. As

outlined in Section 3.1 and Appendix H of the EIS, confirmed violations would be reported to the squadron's commanding officer and appropriate disciplinary measures would be taken.

The "near-miss" incident mentioned in the comment letter refers to an event that occurred on May 29, 1997, at the pass between the Saline and Panamint valleys within the R-2508 Complex. The incident, as reported by Death Valley National Park staff, described an F-15 or F-16 jet, which was at approximately 300 feet AGL, flying over a National Park Service contract helicopter, which was at approximately 50 feet AGL. Both aircraft were operating at permitted flight altitudes. This area is within the R-2508 special use airspace and falls under joint military airspace management. R-2508 CCF, the designated scheduling agency, was notified of the event but did not immediately initiate an investigation because National Park Service officials indicated their interest in filing a formal near mid-air collision (NMAC) report. A NMAC must be filed with an FAA facility, and the investigation is conducted by that agency.

A NMAC was not filed within 15 days (the normal period in which the FAA retains air traffic control records), and National Park Service officials subsequently filed a Situation Report (SITREP) with the CCF. A SITREP is a review of a reported incident or situation to determine if any additional actions are needed or can be taken to improve safety. The SITREP and specific National Park Service recommendations were reviewed in August 1997 by the R-2508 Operational Working Group. In response to a December 1997 letter from the Death Valley National Park Superintendent, the R-2508 Complex management is re-evaluating the National Park Service's recommendations to ensure the safety of all flight operations within R-2508.

MTRs, such as VR-1257, are designated by the FAA for low-level training and are not subject to Navy regulations prohibiting flight below 3,000 feet AGL when over sensitive resource areas, such as national parks. The Navy has a self-imposed restriction of 1,500 feet AGL on flights within VR-1257 over Joshua Tree National Park. Flight above 1,500 feet AGL on VR-1257 is not permitted due to the route restrictions of VR-1257 and potential conflict with other FAA air corridors. As discussed in Section 4.1, Land Use and Airspace, the proposed action at either air station would increase usage of VR-1257 by approximately 1 sortie per week. Overflight noise levels along VR-1257 under current conditions and with the proposed F/A-18E/F aircraft and under different power settings and altitudes are presented in sections 3.7 and 4.7, Noise.

2-F Overflight noise levels under current conditions with F/A-18C/D aircraft is presented in Section 3.7, Noise, and overflight noise levels with F/A-18E/F aircraft is presented in Section 4.7, Noise. As has been noted in the response to comment 2-C, Table 4-27 in the EIS provides estimated peak dBA levels for individual aircraft overflights under various altitude and power setting conditions.

There are currently 168 F/A-18C/D aircraft assigned to NAS Lemoore. During 1997, these aircraft were used in 9,900 sorties in the R-2508 Complex. The F/A-18E/F aircraft associated with the proposed action are expected to produce about 7,462 annual sorties to the R-2508 Complex at the end of Phase 1 (2004) and 9,658 annual sorties at the end of Phase 2. Phase 2 of the proposed action will be accompanied by a reduction in the number of F/A-18C/D aircraft at NAS Lemoore. By the end of Phase 2, there will be 58 F/A-18C/D aircraft remaining at NAS Lemoore. Assuming that F/A-18C/D sorties from NAS Lemoore to the R-2508 Complex continue at the 1997 rate, total sorties from NAS Lemoore to the R-2508 Complex would increase to about 16,785 per year at the end of Phase 1, but would then drop to 12,753 per year by the end of Phase 2. Total military aircraft sorties in the R-2508 Complex would be 19.5 percent higher than 1997 conditions at the end of Phase 1 and 8.1 percent higher than 1997 conditions at the end of Phase 2. As indicated in the response to comment 2-E, this minor increase in flight activity would not produce a noticeable increase in noise levels within the affected park and wilderness areas.

Although new information has been added to the EIS, this new information has not substantially altered the conclusions of the analysis, and no new significant impacts have been identified. It was determined that a supplemental draft was therefore not required. A 30-day no action period will follow publication of the final EIS, during which interested parties may make additional comments. The final EIS will be distributed to all appropriate agencies, interested parties, and groups or individuals that commented on the draft EIS.

2-G The public involvement process followed the procedures as outlined in NEPA. A notice of scoping was sent to the National Park Service and other interested parties. Announcements appeared in the Fresno Bee, the Imperial Valley Press, and the Hanford Sentinel, and scoping meetings were conducted on April 28 and 29, 1997. Comments expressed during the scoping process were considered when preparing the EIS.

The draft EIS was available in local public libraries after the notice of availability was published in the Federal Register on December 17, 1997. Public notification was on December 21 and 22, 1997, in the Fresno Bee, the Imperial Valley Press, and the Hanford Sentinel. Public Hearings were held on January 7, 1998, in Lemoore and January 8, 1998, in El Centro. As provided by NEPA, a 45-day public review began with issuance of the draft EIS to allow for public comments and questions. All public comments are printed in the final EIS, and the responses to these comments have been provided. Additionally, after publication of the final EIS, a 30-day public review period follows to allow for additional comments.

2-H Comments made during the scoping meetings addressed primarily low-level flights over national parks and wilderness areas. The Navy considered scoping comments in preparing the draft EIS, but low-level flights are unplanned events that are not a direct function of the number of aircraft. The Navy acknowledges the importance of eliminating flights in violation of altitude restrictions and, as discussed in comment 2-D, is taking steps to curtail them. Discussion of violations of the 3,000-feet AGL restriction and overflights of national parks and wilderness areas by aircraft that are in compliance with flight regulations has been added to the final EIS. Please see sections 3.1 and 4.1, Land Use and Airspace, sections 3.7 and 4.7, Noise, and Appendix H of the final EIS.

2-I The Navy has consulted with and continues to consult with the National Park Service concerning this EIS and use of the airspace over national parks. Approximately 19 copies of the draft EIS were sent to the Department of Interior for circulation to the appropriate agencies. Additional copies were provided upon request. A meeting was held with the National Park Service and a representative from Department of Interior to solicit concerns for inclusion in the final EIS.

2-J As a result of the meeting between the Navy and the National Park Service, an expanded discussion of current and future noise conditions in national parks and wilderness areas has been added to the EIS (sections 3.7 and 4.7 of the final EIS). The Navy and other branches of the military are involved in efforts to better understand how park users are affected by aircraft noise and how these noise concerns can be addressed. To provide a basis for characterizing aircraft noise, the Navy is attempting to establish baseline noise data for all aircraft engines. The Navy and the Air Force are also studying natural quiet in park and wilderness areas to determine how visitors experience aircraft noise. Further, the Navy participates in discussions sponsored by the CCF, which includes the National Park Service, and uses National Park Service materials in pilot briefings to stress the importance of maintaining 3,000 feet AGL above the national park and wilderness areas designated in the *R-2508 User's Handbook* (see Section 3.1 of the EIS).

The Navy, however, does not manage the airspace over national parks and does not have authority to directly implement changes to airspace operations. The Joint Policy and Planning Board (JPPB)

is the agency responsible for changes to the R-2508 airspace. Although the Navy is the designated scheduling activity for the VR-1257 MTR, this route is used by all branches of the military and is under the authority of the Department of Defense. The Navy does not have authority to make changes to this route. Changes to airspace use and configuration would require the concurrence of all affected branches of the military and the approval of the FAA.

2-K The schedule for the EIS was set forth in the scoping letters originally sent to concerned agencies and members of the public. Discussion of potential impacts to national park and wilderness areas has been added to the final EIS in the response to concerns of the National Park Service and others; however, no new significant impacts were identified. After publication of the final EIS, a 30-day public review period will follow to allow for additional comments.

2-L The final EIS has been expanded to include a discussion of effects of the proposed action on wilderness areas and national parks. Please refer to Section 3.1, Land Use and Airspace, for a discussion of flights over sensitive areas, such as national parks and wilderness, and Section 4.1 for a discussion of impacts to these land uses. Also please refer to sections 3.7 and 4.7, Noise, for a discussion of aircraft noise above national parks and wilderness areas. See also the response to comment 2-J.

2-M Evaluation of the potential impacts on national parks and wilderness areas has been included in the final EIS. Military airspace and training routes are specifically defined to contain military activities to identifiable areas and to avoid, to the greatest extent possible, sensitive land uses, such as national parks. As discussed in the response to comment 2-J above, the Navy does not have the direct authority to implement changes to operations within R-2508 or VR-1257.

The following mitigations suggested by the National Park Service cannot be implemented for the reasons indicated. Changes to routing and scheduling procedures for aircraft are not practical due to time and distance constraints that would interfere with Navy training requirements. Seasonal changes in flight schedules are not possible, due to the need for continuous training as pilots prepare to deploy to ships. Overflight of the Sierra at higher altitudes is not possible due to conflicts arising with commercial air traffic at the higher altitudes. A Navy request to raise the flight altitude along the transit route between NAS Lemoore and the R-2508 Complex from between 19,000 and 23,000 feet msl, to between 23,000 and 27,000 feet msl was denied by the FAA in September 1997. Raising the minimum flight altitudes within the permitted range of 19,000 to 23,000 feet msl is not possible since aircraft traveling to and from R-2508 are required to travel at different altitudes.

The FAA is considering a separate proposal to establish a new stereo fix point (Fangg) for use by aircraft traveling across the Sierra from NAS Lemoore to R-2508. This additional fix point was proposed to alleviate conflicts between aircraft entering R-2508 and aircraft conducting training within R-2508. The effect of this new route on noise in national park and wilderness areas cannot be accurately determined at present since this fix point has not been approved, the final location has not been established, and the anticipated distribution of flights between routes is not known. Creation of a fourth transit route could reduce overflight noise effects along one or more of the existing transit route corridors by distributing the same number of flights between more routes. See discussion of the proposed fix point in Section 3.1 of the EIS.

2-N The Navy agrees that violations of overflight restrictions are unacceptable. The Navy will continue to work with the National Park Service and the R-2508 CCF to enforce the altitude restrictions.

2-O The Navy agrees and looks forward to working with the National Park Service at the local level in managing these issues.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Field Office
2730 Loker Avenue West
Carlsbad, California 92008

JAN 3 0 1998

Mr. Surinder Sikand
Code 18511
U.S. Navy - Naval Facilities Engineering Command
Engineering Field Activity West
900 Commodore Drive
San Bruno, California 94006-5006

Re: Draft Environmental Impact Statement (EIS) for Development of Facilities to Support the West Coast Basing of the F/A-18E/F Aircraft, Imperial County, California (1-6-98-TA-58)

Dear Mr. Sikand:

The U.S. Fish and Wildlife Service (Service) has reviewed the Draft Environmental Impact Statement (DEIS), received December 15, 1997, concerning the proposed siting of 164 F/A-18E/F aircraft and 9,090 military/civilian personnel, along with the development of support facilities at Naval Air Facility (NAF) El Centro (Seeley USGS 7.5' Quadrangle, T15S, R12E, Sections 25, 26, 35, and 36, T15S R13E, Sections 17, 18, 19, 20, 29, 30, and 31, and T16S, R12E, Section 1). Direct disturbance to approximately 2.1 acres of ruderal habitat and 80 acres of agricultural lands will result from the action. Indirect impacts to the immediate and surrounding area will occur from an overall increase in Navy activity and flight operations. Acquisition of the new aircraft will generate an annual addition of 125,906 airfield and training events (during daylight, evening, and nighttime hours) at the military facility.

The increased number of aircraft operations will be accompanied by unavoidably higher noise levels. Analyses conducted for the DEIS concluded that under the proposed plan, unmitigable noise impacts will occur within the vicinity of the base (Page 4-52). Both the City of Imperial and the community of Seeley will experience average noise exposures (over a 24-hour period) which would be classified as "beyond normally acceptable land use compatibility criterion." The indirect affects of such actions will simultaneously be imposed upon the existing resources. Consequently, the documented occurrence of the federally listed endangered Yuma clapper rail (*Rallus longirostris yumanensis*) immediately west of the facility implies that the species will be exposed to a 85-dB CNEL (20-dB greater than the acceptable Community Noise Equivalent Level [CNEL]). 3-A

The general flight patterns depicted in the DEIS document (Page 3-18) also indicate that the western extreme of the military training routes and operations areas, extend over the Peninsular Mountain Ranges. This particular region is consistently occupied/utilized by ewe groups of the federally proposed endangered Peninsular bighorn sheep (*Ovis canadensis*) as both lambing and foraging areas. Suitable habitat for the species is rapidly diminishing in the Peninsular Mountain Ranges as a consequence of heavy urban development. Ultimately, preservation of remaining occupied bighorn sheep habitat, as well as measures to avoid disruption of normal behavioral patterns, will be vital to the maintenance and recovery of the species.

The CNEL diagram detailing future noise impacts (Page 4-54) around NAF El Centro did not generate an unmitigable noise contour around the Peninsular Mountain Ranges. The Service would emphasize that using an average noise level centered on the airstrip may not be appropriate in determining all potential affects to bighorn sheep. Significant impairment of breeding, feeding, or sheltering behavior could result from single, punctuated flyover/flyby events. The variability in peak noise levels from flight training can range from 51-dB to 131-dB, depending upon the particular activity and aircraft power level, distance offset from ground track, and slant distance from flight path. As stated on page 4-56 of the DEIS, the criteria for significant impacts to resources were defined as those actions that "substantially affect species and/or habitats, including those that are restricted at a regional scale, habitats that serve as concentrated breeding or foraging areas and are limited in availability, or habitats that support substantial concentrations of one or more special status species." Accordingly, the almost two-fold increase in flight activity (and noise) associated with the siting of the F/A-18E/F aircraft constitutes a significant, unaddressed impact to Peninsular bighorn sheep. 3-B

The Service would stress that both the Peninsular bighorn sheep and the Yuma clapper rail were excluded from consideration for the proposed action (Page 3-86). It is essential the Navy understand that the effects of planned activities cannot be confined to the immediate project footprint. Pursuant to CFR 402.02, indirect impacts (e.g., noise levels), and those federally listed species occurring within the affected area, must be included within the analysis of a Federal action. The DEIS, though, did confirm the presence of two sensitive species on the site; the western burrowing owl (*Athene cunicularia hypugea*) and the flat-tailed horned lizard (*Phrynosoma mcallii*). The burrowing owl was observed, during a single visit in July 1997, in both the runway and operations areas of the project. Prior to any potential construction, the Navy and Service should jointly coordinate efforts to develop owl/burrow avoidance and minimization measures, and devise a post-construction monitoring scheme to evaluate the effectiveness of strategies to reduce impacts to burrowing owls. 3-C

Also, the flat-tailed horned lizard was found on NAF El Centro, but no species-specific mitigation measures were outlined within the DEIS. In a correspondence, dated December 5, 1997, the Service previously stated that a management strategy for the flat-tailed horned lizard had been finalized. The Navy, along with other Federal, state, and local agencies, has made a commitment to establish one research and five management areas for the species, and implement special mitigation/compensation measures for lands outside these designated regions. Furthermore, the 3-D

signatory agencies would be responsible for incorporating the document's conservation measures into their land management plans. Under the rangewide strategy, NAF El Centro is not within a management area, but the presence of the flat-tailed horned lizard and the existence of the species' habitat in the restricted portions of the military operations areas (i.e., R-2510 [West Mesa] and R-2512 [East Mesa]) must be addressed.

In general, appropriate avoidance, minimization, and/or mitigation measures need to be discussed for the flat-tailed horned lizard, as well as the Peninsular bighorn sheep, Yuma clapper rail, and the western burrowing owl. Consequently, the Service recommends that the Navy initiate informal/formal consultation to jointly address the issues of project planning and listed/sensitive species. Focused surveys should be specifically conducted within the action area for the flat-tailed horned lizard, Yuma clapper rail, and the western burrowing owl using Service approved protocol. Additionally, data should be gathered on the existing site vegetation, as well as for the two sensitive California Native Plant Society species (i.e., Thurber's pilostyles [*Pilostyles thurberi*], and sand food [*Pholisma sonorae*]). Currently, the occurrence of sand food in Imperial County is limited to a single recorded account. Therefore, verification and supplemental data on the species could be utilized in further defining the plant's range and establishing avoidance measures. 3-E

The Service appreciates the opportunity to comment on the DEIS. Questions or concerns pertaining to this correspondence can be directed to Debbie MacAller of my staff at (760) 431-9440.

Sincerely,

Sheryl L. Barrett

Sheryl L. Barrett
Assistant Field Supervisor

- Letter 3 –
US Fish and Wildlife Service
Response to Comments

3-A Portions of the New River, immediately west of NAF El Centro, would experience noise levels of 65 to 85 dB. Existing noise levels are between 60 and 75 dB for the same reaches of the river. This represents a 5- to 10-dB increase. It is not expected that this increase would cause a significant impact to the Yuma clapper rail. However, if NAF El Centro were selected as the preferred alternative, the Navy would reevaluate the situation and determine whether an informal consultation under the ESA is necessary. If impacts were predicted, formal consultation would be initiated with the US Fish and Wildlife Service.

3-B The following text has been added to the EIS, Section 4.8 Biological Resources, NAS Lemoore Alternative:

"Aircraft on training operations in the R-2508 Complex may pass over habitat for the California (Sierra Nevada) bighorn sheep and in VR-1257 may pass over habitat for Peninsular bighorn sheep in the Anza-Borrego Desert State Park. In a study monitoring noise impacts to the biota of Nevada from NAS Fallon operations, observers noted that during 16 overflights (2 above the speed of sound, 8 low-level, and 6 high-level), bighorn sheep showed no reaction or minor reactions to all overflights but one. Seventy-two percent of mountain sheep exposed to aircraft disturbances showed no reaction, and 24 percent showed minor reactions. These findings were based on observations of free-ranging wildlife during actual military overflights (Nevada Department of Wildlife 1989).

"The Air Force also commissioned a study to examine the physiological the responses of pronghorn sheep, bighorn sheep, and elk to a variety of visual and auditory stimuli at Hill Air Force Base in Utah. This study monitored heart rate and body temperature responses and found that two consecutive sonic booms elicited the responses that were of short duration. Decreased the responses to subsequent sonic booms indicated rapid habituation to this disturbance. Heart rate the response to subsonic F-16 flyovers was both minimal and of short duration. The responses to aircraft were transient and of short duration (Workman et al. 1992).

"A third series of studies on the effect of noise on ungulates found that aircraft overflights did not have a detrimental influence on heart rate in mule deer and bighorn sheep. In the initial study, desert mule deer and bighorn sheep were exposed to simulated low-altitude jet aircraft noise. Heart rate, body temperature, and behavior were monitored and compared for periods before, during, and after the simulated overflights. Heart rates increased during overflights, sometimes more than doubling, but returned to resting rates in two minutes or less. As the study progressed, all animals became habituated to the sounds, and both the rate and degree of increase in heart rate decreased. At the end of the study, mean heart rate changes were within normal expectations for seasonal changes (Krausman et al. 1993a).

"The same study organizers installed heart-rate monitors on bighorn sheep in a 791-acre (320-hectare) desert enclosure. Heart rates and behavior were monitored before, during, and after low-level overflights by F-16 aircraft. Again, heart rates returned to pre-exposure levels in less than two minutes and behavioral alterations were not long lasting. Although the sheep often ran during noise exposure, they typically resumed normal activities after traveling less than 30 feet (10 meters) (Krausman et al. 1993b and c).

"It is possible that overflights of lambing areas could occur in any given year. Lambing can take place anywhere in the park where suitable conditions exist. In addition, lambing areas may change from year-to-year depending on disturbance, weather, availability of feed, and predation. Given this variability, it is not possible to predict flights over lambing areas from year-to-year.

"Based on these studies, the small number of flights that would be added to VR-1257 by the proposed action (approximately one per week), and the minimum 3,000-foot AGL restriction above potential habitat within R-2508, it is not anticipated that a significant impact to Peninsular or California bighorn sheep would occur. No mitigation would be required; however, to minimize the potential for impacts, the Navy will continue to educate new pilots as to the valuable resources present in these areas and to stress the importance of adhering to the 3,000 feet AGL restriction, as it applies to national parks and wilderness areas (see Section 3.1), and as close as possible to the VR-1257 flight path."

The following text has been added to the EIS, Section 4.8 Biological Resources, NAF El Centro Alternative:

"As discussed above for NAS Lemoore, studies indicate that no significant impacts to Peninsular or California bighorn sheep would be expected from training flights to or within the R-2508 Complex or along VR-1257. In addition, there would be no impacts to the Peninsular bighorn sheep from operations within the airspace of NAF El Centro. Although the western MOA of NAF El Centro (Figure 3-12) does include the extreme eastern portion of the Anza-Borrego Desert State Park, it is outside the area used by Peninsular bighorn sheep. It is not anticipated that activities within this MOA would increase noise levels in the peninsular Mountain Range areas used by bighorn sheep. No significant impact would be expected."

3-C It is not anticipated that the proposed action would significantly impact the Yuma clapper rail. The following text has been added to Section 4.8 of the EIS:

"Although potential habitat for the Yuma clapper rail was identified in the northwestern corner of NAF El Centro, no individuals were seen during a 1996 survey performed for the Integrated Natural Resource Management Plan. In addition, no suitable habitat is found in off-base training areas. Potential off-base habitat for the Yuma clapper rail would not be significantly impacted by noise from the proposed action. No significant impact would occur to Yuma clapper rail and no mitigation would be required."

The construction sites identified for the proposed action were surveyed for the presence of the burrowing owl and potential burrowing owl nest sites. Most of these construction sites were either occupied by buildings or contained landscaping that did not provide suitable habitat for burrowing owls. The remaining undeveloped sites do contain suitable habitat, and, although no nest sites were identified, owls were observed to be nesting in the area. The draft EIS specifies that a preconstruction survey would be conducted to determine if the burrowing owl has moved into any of the construction sites. If nesting burrowing owls were discovered at a construction site, the owls would be transplanted elsewhere, and new artificial burrows would be created. See discussion of the flat-tailed lizard in the response to comment 3-D below.

3-D The following text has been added to Section 4.8 of the EIS:

"The flat-tailed horned lizard has not been identified on the NAF El Centro base itself but has been found in the western MOA of NAF El Centro. Potential impacts to the flat-

tailed horned lizard from training activities in the R-2510 and R-2512 ranges of NAF El Centro are described in a 1996 range-wide management strategy, a 1997 biological assessment, and a signed conservation agreement. All activities associated with these ranges would be conducted consistent with the conservation agreement, and no significant impact would be expected."

3-E If NAF El Centro is selected as the preferred site, formal consultation with the US Fish and Wildlife Service will be requested if any impacts to listed federal species are identified. Any additional surveys or biological assessments would be conducted at that time.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
3310 El Camino Avenue, Suite 130
Sacramento, California 95821

IN REPLY REFER TO:

1-1-98-I-553

February 17, 1998

Mr. Surinder Sikand
U.S. Department of Defense
Department of the Navy
Naval Facilities Engineering Command
Engineering Field Activity West
900 Commodore Drive
San Bruno, California 94066

Subject: Draft Environmental Impact Statement for the Development of Facilities to Support Basing United States Navy Pacific Fleet F/A-18E/F Aircraft on the West Coast of the United States, at Lemoore Naval Air Station, Kings and Fresno Counties, California.

Dear Mr. Sikand:

This responds to your December 14, 1997, request for comments on the Draft Environmental Impact Statement (DEIS) for the subject project, at the Department of the Navy (Navy) base at Lemoore Naval Air Station, near Lemoore, Kings and Fresno Counties, California. The Fish and Wildlife Service (Service) has reviewed the DEIS pursuant to section 7(a) of the Endangered Species Act of 1973, as amended (Act). The DEIS has been reviewed for potential impacts to the federally endangered Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*), Fresno kangaroo rat (*Dipodomys nitratoides exilis*), blunt-nosed leopard lizard (*Gambelia silus*), San Joaquin kit fox (*Vulpes macrotis mutica*), American peregrine falcon (*Falco peregrinus*), California least tern (*Sterna antillarum brownii*), California jewelflower (*Caulanthus californicus*), palmate-bracted bird's beak (*Cordylanthus palmatus*), San Joaquin woolly-threads (*Lembertia congdonii*) and federally threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), Aleutian Canada goose (*Branta canadensis leucopareia*), western snowy plover (*Charadrius alexandrinus nivosus*), bald eagle (*Haliaeetus leucocephalus*), giant garter snake (*Thamnophis gigas*), California red-legged frog (*Rana aurora draytonii*), delta smelt (*Hypomesus transpacificus*), vernal pool fairy shrimp (*Branchinecta lynchi*), and Hoover's woolly-star (*Eriastrum hooveri*).

The Service has the following comments on federally endangered and threatened species that may occur with proposed project areas:

1. The DEIS states that the Navy will design new storm water conveyances and will upgrade existing conveyances as necessary to adequately convey peak storm water flows (page 4-60). 3A-A

The Service would like to know where these facilities are going to be constructed. Will water be directed into endangered species habitats identified on page 3-78? Will flood flows be directed into the giant garter snake potential habitat areas, or habitats for other listed species? If so, could the Navy describe any anticipated impact on these habitats during flood events? 3A-A

2. The Service recommends that the Navy conduct a reconnaissance survey for San Joaquin kit foxes, Fresno kangaroo rats, and blunt-nosed leopard lizards on the lands of the proposed family housing area. These three listed species are sometimes found in disturbed habitats. A specific description of existing land conditions at the housing area would be helpful. 3A-B

The Service is unable to determine from the information provided in the DEIS if the proposed project is likely to affect listed species. Submission of the requested information will assist the Service in making this determination.

If you have any questions or further information, please contact Don Hovik or Peter Cross at the Sacramento Fish and Wildlife Office at (916) 979-2728.

Sincerely,

David Harlow

for Wayne S. White
Field Supervisor

- Letter 3A –
US Fish and Wildlife Service
Response to Comments

3A-A Flood waters at NAS Lemoore are directed to the Industrial Wastewater Treatment Plant and to either the Kings River or sewage evaporation ponds. Only in the event of severe flooding would flood waters flow through potential natural habitat of threatened species. New stormwater conveyances and upgrades would not be located in any area of potential habitat of any endangered species and, therefore, would not be expected to affect any endangered species.

3A-B An ongoing replacement housing project is underway in the family housing area. A categorical exclusion was prepared for this project as part of the Base Realignment and Closure EIS and ROD prepared in 1995. Additionally, a biological survey of the entire station is in process. As a part of this survey, the subject area was evaluated for the presence of threatened and endangered species, and none were found. Therefore, no significant impacts are expected to occur to threatened or endangered species from construction in the proposed family housing area.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

JAN 23 1998

Surinder Sikand (code: 18511)
US Navy
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 94066

Dear Mr. Sikand:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the ***DEVELOPMENT OF FACILITIES TO SUPPORT BASING US PACIFIC FLEET F/A-18E/F AIRCRAFT ON THE WEST COAT OF THE UNITED STATES, Naval Air Station (NAS) Lemoore and Naval Air Facility (NAF) El Centro, California.*** Our comments are provided pursuant to the National Environmental Policy Act (NEPA), Section 309 of the Clean Air Act, and the Council on Environmental Quality's NEPA Implementing Regulations (40 CFR 1500-1508).

The purpose of the proposed action is to develop facilities to support the West Coast basing of the Navy's new F/A-18E/F aircraft. The DEIS indicates that it is necessary for these aircraft to be based on the West Coast to provide a balance in the force structure and be near the West Coast-stationed aircraft carriers on which the aircraft deploy. The proposed action includes siting 164 F/A-18E/F aircraft, locating associated military personnel and dependents, and providing associated training functions at the receiving installation. In addition to the increased staffing and equipment levels, the proposed action would increase Navy activity and flight operations at the receiving installation. Two installations were analyzed in detail in the DEIS: Naval Air Station (NAS) Lemoore and Naval Air Facility (NAF) El Centro. NAS Lemoore is the preferred alternative identified in the DEIS.

We have rated the DEIS as EC-2, Environmental Concerns - Insufficient Information. Please refer to the attached "*Summary of Rating Definitions and Follow-Up Action*" for a more detailed of EPA's rating system. We are concerned that the proposed project and EIS was developed with little or no consideration given to several Executive Orders and directives requiring that Federal projects and activities be developed in an environmentally sensitive manner by incorporating features related to pollution prevention, energy efficiency, water conservation, hazardous waste minimization, and solid waste reduction and recycling. We are concerned that although new facility construction and renovation work is proposed at both Lemoore and El Centro, no mention is made of the requirement to follow Executive Orders 12856 (Pollution Prevention) and 12902 (Energy Efficiency and Water Conservation at Federal Facilities). 4-A

The DEIS also does not reflect the Council on Environmental Quality's 1993 guidance document to Federal agencies on incorporating pollution prevention features and techniques in Federal agency NEPA documents. We believe it is vital for the Navy to use the proposed project's NEPA documentation as an opportunity to incorporate a broad range of pollution prevention features in the project's design, construction and operation at either alternative site. We are also concerned that the air mitigation measures required under EPA's general conformity rule are basically conceptual in nature, and lack definitiveness. The FEIS should clearly articulate the air mitigation measure(s) that would be implemented by the Navy in order to ensure air quality conformity under Section 176 of the Clean Air Act and EPA's general conformity rule. 4-B

We appreciate the opportunity to comment on the DEIS. Please send one copy of the FEIS to me at the letterhead address (code: CMD-2) when it is filed with EPA's Washington, D.C. office. If you have any questions, please call me at 415-744-1584 or my staff reviewer for this EIS, David Tomsovic, at 415-744-1575.

Sincerely,



David Farrel, Chief
Federal Activities Office

Enclosures:
(1) Summary of Rating Definitions and Follow-Up Action
(2) EPA Comments on DEIS
(3) Pollution Prevention Checklists

M.I. #003009

SUMMARY OF RATING DEFINITIONS AND FOLLOW-UP ACTION

Environmental Impact of the Action

LO-Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of environmental quality, public health or welfare. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommend for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1-Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3-Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From: EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

U.S. EPA Comments on DEIS for Development of Facilities to Support Basing U.S. Pacific Fleet F/A-18E/F Aircraft on the West Coast of the United States

JAN 2 3 1998

POLLUTION PREVENTION

EPA believes that there are significant opportunities available for the Navy to incorporate pollution prevention techniques in the design, construction and operation of the proposed project, whether at Naval Air Station (NAS) Lemoore or Naval Air Facility (NAF) El Centro. In several respects the DEIS was prepared with no consideration given to Executive Orders and Council on Environmental Quality (CEQ) guidance concerning pollution prevention, energy efficiency, water conservation, minimization of hazardous waste, reduction and recycling of solid waste, and decreased use of pesticides. Refer to the sections below for additional details. 4-C

Council on Environmental Quality (CEQ) Pollution Prevention Guidance: The DEIS did not address pollution prevention features in the project to the extent outlined by the CEQ in the January 29, 1993 *Federal Register*. The Navy's FEIS could be strengthened by specifically designing, constructing and operating this project with pollution prevention features as an integral element. We've enclosed pollution prevention checklists on energy management, water use, landscaping, pest management and building/housing construction for use in developing the FEIS and Record of Decision. Although specific items on these checklists may not apply or have been already identified in the DEIS, other measures may prove feasible as the project proceeds. We urge the Navy to integrate a broad range of pollution prevention measures in the project and to include appropriate pollution prevention commitments in the FEIS and Record of Decision. 4-D

Executive Order 12902 - Energy Efficiency and Water Conservation at Federal Facilities: The DEIS gives no indication whether this Executive Order (dated March 8, 1994) was considered in the impact documentation for the project. Executive Order 12902 has several potential implications for the project, including requirements in Section 306 concerning construction of new Federal facilities. Section 108 of the Executive Order defines the term "Federal facility" as "any building or collection of buildings...which is owned by the United States or any Federal agency..." According to Table 2-1 of the DEIS, the preferred alternative at NAS Lemoore proposes to construct an aviation armament shop (45,008 square feet) and a counseling assistance center (17,244 square feet) and to modify and expand other facilities: 399 family housing units, youth and child development centers, strike fighter weapons school and other military construction projects. Section 306 of Executive Order 12902 specifically provides that for new Federal facility construction, the agency involved in the construction shall "design and construct such facility to minimize the life cycle cost of the facility by utilizing energy efficiency, water conservation, or solar or other renewable energy techniques..." and "utilize passive solar design and adopt active solar techniques where they are cost-effective." 4-E

The FEIS should address how the Navy would ensure that the proposed project meets the applicable requirements of Executive Order 12902. Appropriate commitments regarding energy efficiency and water conservation should be reflected in the FEIS and the Record of Decision.

Executive Order 12856 - Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements: As with Executive Order 12902, the DEIS does not acknowledge the various requirements of Executive Order 12856 as they may apply to the proposed project. The preface of Executive Order 12856 references a requirement of the Pollution Prevention Act of 1990 that

> "it is the national policy of the United States that whenever feasible, pollution should be prevented or reduced at the source, that pollution that cannot be prevented should be recycled in an environmentally safe manner; that pollution that cannot be prevented or recycled should be treated in an environmentally safe manner; and that disposal or other release into the environment should be employed only as a last resort...."

4-F

We recommend that the FEIS address the applicability of Executive Order 12856 to the proposed project, both in terms of the Executive Order's pollution prevention requirements and its toxic release inventory reporting requirements for covered facilities.

Hazardous Waste Minimization: The DEIS (p. 4-73) states that additional hazardous wastes generated by the F/A-18E/F squadrons at Lemoore NAS "would result in a less than 5-percent increase in hazardous waste generation at the base," while hazardous waste generation at NAF El Centro due to the F/A-18E/F squadrons would rise approximately 6.2 percent (p. 4-75). However, there is no indication as to whether hazardous waste minimization opportunities have been assessed by the Navy in the course of preparing the DEIS. This should be addressed in the FEIS. Appropriate commitments regarding implementation of hazardous waste minimization should be in the FEIS and the Record of Decision.

4-G

Water Conservation: Page 4-66 of the DEIS indicates that, for the El Centro alternative, "The increased demand for water would not significantly affected the water supply of NAF El Centro....The infrastructure at NAF El Centro...has the capacity to accommodate the increase....No mitigation would be required." We believe it is equally important for the Navy to focus on water conservation opportunities at a receiving facility as well as the availability of water supply and the capacity of the infrastructure. We recommend that a firm commitment be included in the FEIS and Record of Decision to implement all reasonable water conservation opportunities associated with the proposed project.

4-H

Sold Waste Reduction and Recycling: The DEIS (p. 4-67) indicates that solid waste generation at NAF El Centro would increase by 540 percent over existing levels should the aircraft basing occur there, while solid waste generation at NAS Lemoore would increase by 65 percent with F/A-18E/F basing. Based upon a January 13 conversation between Surinder Sikand (Navy) and David Tomsovic (EPA), these 540 and 65 percent increases are a strict function of the 540 and 65 percent increases projected for military personnel and dependents at the two facilities. The Navy did not consider whether solid waste generation could be reduced, perhaps significantly, to less than the 540 and 65 percent increases projected in the DEIS. We consider this to be a serious shortcoming and urge the Navy to undertake a comprehensive solid waste reduction and recycling program to minimize the burden of waste disposal on landfill sites.

4-I

We also note the statement repeated on both page 4-64 (for NAS Lemoore alternative) and page 4-67 (for NAF El Centro alternative) that "No mitigation would be required" for solid waste-related impacts. We believe that the statement "No mitigation would be required..." should be amended in the FEIS to read

> "A comprehensive solid waste reduction and recycling program for construction debris, scrap metal, white and mixed paper, cardboard, glass, wood, plastics, aluminum and other recyclable materials shall be undertaken for F/A-18E/F-related military activities as well as for military personnel and dependents associated with the aircraft basing."

4-J

Appropriate solid waste reduction and recycling commitments should be reflected in the FEIS and Record of Decision for the project.

Use of Pesticides and Herbicides: The DEIS makes a brief reference to the on-going use of pesticides at NAS Lemoore and NAF El Centro. According to page 3-119, pesticides at NAS Lemoore "are applied throughout the base by certified station or contracted personnel." NAS Lemoore implements a pest management plan that specifies the area to be treated, the type of pest, the frequency of application, pesticide product name and EPA registration number, mixing concentrations, and any special precautions needed. At NAF El Centro, according to page 3-123, "pesticides are applied monthly and on an as-needed basis throughout the base by a contractor." The DEIS gives no indication as to what types of pesticides are used at the two facilities, the quantities that are applied on annual basis, and perhaps most importantly, whether alternatives to the use of pesticides are available, particularly for highly toxic pesticides.

We recommend that the FEIS provide additional discussion regarding the current use of pesticides at the facilities, whether pesticides use is projected to rise under the proposed project, whether pesticides not currently used would be employed under the proposed project, and whether the Navy has evaluated an alternative to reduce and minimize pesticides use under the proposed action. The FEIS should discuss whether an alternative that minimizes and reduces the use of pesticides constitutes a reasonable alternative for purposes of NEPA analysis. We recommend adoption of an alternative focusing on Integrated Pest Management (IPM), an approach emphasizing biological and non-chemical pest controls with a selective use of chemical pesticides only when IPM approaches are not adequate in controlling the problem. Should chemical controls prove necessary, we encourage the Navy to use the least-toxic pesticide available to control the problem.

4-K

We are particularly concerned that children of military personnel may be exposed to chemical pesticides at base facilities such as at the child care facility or in base housing, as well as the cumulative exposure risks to children from pesticides used at various locations on the bases where children spend significant amounts of time each day. For example, are pesticides used at the child care facility at NAS Lemoore (which services about 300 children, according to p. 3-99) or at the child development center at NAF El Centro (currently operating above its maximum capacity of 40 children, according to p. 3-102)? Are pesticides regularly used in base housing? Are lawns and open spaces regularly treated with chemical pesticides, exposing children during playtime?

4-L

We recommend that the FEIS contain a fuller discussion of existing pesticides use at the facilities, pesticides use under the proposed project, mitigation measures to avoid and minimize adverse health-related impacts to base personnel and dependents, and whether the Navy has evaluated an alternative to avoid pesticides use as much as possible and/or an alternative that employs less toxic substances. 4-L

Lastly, we note that page 6-7 discusses the applicability of Executive Order 13045, concerning "Protection of Children from Environmental Health Risks and Safety Risks." However, there is no discussion regarding environmental health and safety risks to children from potential use of pesticides at the receiving facility or potential exposure of these children to hazardous materials, hazardous waste and other environmental toxins such as asbestos-containing materials, polychlorinated biphenyls, lead-based paint, etc. We recommend that the FEIS address environmental health and safety risks to children at the receiving facilities from pesticides use and other hazardous materials in connection with the proposed project. Mitigation measures, if needed, to avoid, reduce and minimize exposure to such contaminants should be identified in the FEIS, and appropriate commitments included in the Record of Decision. 4-M

AIR QUALITY CONFORMITY

The DEIS (p. 4-38) indicates that a Clean Air Act conformity determination for the proposed project "is required." Page 4-41 offers potential mitigation measures 1a, lb and lc to compensate for project-related emissions of ozone precursors and particulate matter less than 10 microns in diameter (PM10) at Lemoore NAS. However, the language in the DEIS implies that mitigation measures 1a, 1b and 1c are not yet definitive (i.e., "negotiate an additional transfer..." and "obtain concurrence..."). As you know, mitigation measures under general conformity are legally enforceable under the Clean Air Act, and therefore must be precise and definitive. The FEIS should more clearly articulate the mitigation measures that would be committed to by the Navy under the Clean Air Act and EPA's general conformity rule. 4-N

We also note that the Navy's general conformity determination has not yet been undertaken in accordance with the public notification and inter-agency review provisions provided for in EPA's final rule. We recommend that the Corps complete the project's conformity determination for applicable criteria air pollutants (i.e., those exceeding de minimis levels) prior to completing the FEIS. The value to completing the conformity process before closure of the NEPA process is that mitigation measures required under conformity can be reflected in the FEIS and in the Record of Decision. 4-O

EDITORIAL COMMENT

Page 3-121: This page indicates that NAF El Centro generated 140 tons of hazardous waste in 1988 and 110 tons of hazardous waste in 1989. We recommend that more current data regarding hazardous waste generation at NAF El Centro (i.e., data from the 1995-1997 timeframe) be presented in the FEIS. 4-P

POLLUTION PREVENTION/ENVIRONMENTAL IMPACT REDUCTION CHECKLIST FOR ENERGY MANAGEMENT

How Can Energy Management Affect the Environment?

The generation of electricity accounts for 35 percent of all U.S. emissions of carbon dioxide, the most prevalent greenhouse gas. Electricity generation also accounts for 75 percent of U.S. sulfur dioxide emissions and 38 percent of nitrogen oxides emissions. These gases can cause smog, acid rain, and global warming. The pollution associated with these greenhouse gases can be reduced by applying energy efficient technologies and practices. These techniques, which include using compact, long-lasting fluorescent lighting as an alternative to incandescent bulbs and using fuel efficient vehicles and alternative transportation methods, can have a significant impact on the environment.

What Questions Should Be Asked To Ensure That These Effects Are Minimized Or Eliminated?

Executive Order 12902, Energy Efficiency and Water Conservation, directs all Federal agencies and facilities to increase efforts to conserve energy and increase energy efficiency. Other Executive Orders, such as 12844 and 12845, call on Federal agencies and facilities to increase their purchasing of alternatively fueled vehicles and energy-efficient computers.

Lighting. Lighting consumes about 20 to 25 percent of the electricity generated in the United States. In commercial buildings, lighting accounts for 40 percent of overall electricity usage. Lighting is one of the easiest areas where energy conservation and efficiency techniques can be applied to save energy.

- Will an assessment be performed to determine the best number, location, and type of lighting fixtures for the facility? A well-designed lighting assessment prevents the installation of excessive lighting fixtures and should incorporate the use of task-specific lighting (e.g., desk lamps) where possible rather than relying on overhead lighting.
- Can motion sensors or timers be used to turn lights off automatically when they are not needed? Motion sensors are widely used in European countries in such areas as hallways, stairwells, and restrooms, as well as work spaces. The use of these sensors is growing in the United States as well.
- Will the most efficient lighting equipment available be used? Optical reflectors and electronic ballasts can improve the efficiency of lower wattage lighting.
- Will the facility take advantage of the lighting provided by natural sunlight through building design, orientation, and internal layout? Other opportunities to maximize the use of natural light include utilizing top-silvered blinds and light colored finishes to reflect light and installing glass skylights or panels on top of office partitions to increase ambient lighting.
- Will the use of external lighting be minimized to reduce impacts to nearby sensitive habitats?
- Will the facility prepare an energy awareness campaign to educate employees about the importance of energy conservation?

Electrical Products and Equipment. A facility's energy consumption can be reduced greatly by purchasing energy-efficient products, such as energy-efficient computers and appliances. Computers alone are believed to account for 5 percent of commercial electricity consumption. The selection of energy efficient products can, then, help reduce a facility's energy consumption.

- Will the facility use energy efficiency as a criterion in purchasing electrical equipment?
- Will commercially available appliances with high energy ratings be selected?
- Will the project make use of high-efficiency, adjustable-speed motors in machinery and equipment applications when possible?
- Can timers be used to turn off computers or equipment automatically when they are not in use?

Heating and Cooling. Improvements in heat, ventilation, and air conditioning (HVAC) systems can lead to significant energy savings.

- Will heat and/or air conditioning thermostat settings be either manually or automatically changed at night, weekends, or at other times when the facility is not in use?
- Will the facility employ a computerized energy management system (EMS) to control heating or cooling systems or lighting?
- Can outside air be intentionally drawn into the facility for cooling purposes during cool weather?
- Can a system to bring warm air down to floor level from the underside of the roof be installed for heating purposes during the winter (e.g., ceiling fans)?
- If the facility will utilize electric chillers, will the chilled water lines be properly insulated?
- If the facility will use a boiler, will the steam/hot water lines be properly insulated?
- Will energy efficient windows or reflective films, such as "low-emissivity" or "low-e" coatings, be installed?
- Could solar panels be integrated into the building design to reduce reliance on electricity or fossil fuels?
- Will the smallest, most-efficient HVAC system possible be used to regulate building temperature properly?
- Will load sharing be used to reduce energy consumption? Shutting down HVAC systems for non-critical uses for short periods can result in significant savings.
- Will the facility use natural shading from trees and shrubbery to reduce heating and air conditioning needs?

- Will appropriate building materials be selected to minimize energy use from heating and air conditioning (e.g., using light colored paint, paving, and roofing materials and not designing a building with large glass facades in hot, sunny areas)?

Insulation Concerns. Insufficient insulation can result in the loss of large amounts of energy. For example, the poor insulation of windows is responsible for approximately 25 percent of all heating and cooling requirements. The insulation of heat-generating equipment also reduces the need for building cooling.

- Will hot or cold equipment surfaces and the building walls and roof be well insulated?
- If this is a manufacturing or industrial environment, will any heat exchangers for heat recovery be installed?
- Will building doors opening to the environment minimize energy losses? Proper weather stripping reduces energy losses, as do revolving and double doors.
- Will insulated windows be used? Such windows employ a gas, such as argon, between two coated panes of glass to minimize energy losses.
- Where appropriate, will energy efficient insulation materials fabricated from recycled materials be used?

Hot Water. Reducing the use of hot water can help conserve energy by decreasing the amount of energy that must be expended to heat water.

- Will water-efficient showerheads be installed?
- Will faucet aerators be installed?
- Will water heaters be sufficiently insulated?
- Will energy-efficient water heaters be purchased?
- In manufacturing facilities, can the heat radiated from hot water pipes be used for other purposes?

Fuel and Gasoline. Increasing fuel efficiency and using alternatively fueled vehicles helps reduce our reliance on fossil fuels, which cause air pollution when burned.

- If the facility requires the use of fleet vehicles, will fuel-efficient, cleaner burning vehicles be purchased?
- Has the use of alternatively fueled (e.g., electric, solar electric, compressed natural gas, ethanol, or methanol) vehicles been considered? Alternatively fueled vehicles have proved successful for short distance purposes. They can be used as fleet vehicles for facility maintenance or for short trips around a large facility.

- Will fixtures be routinely inspected for leaks and other problems, and will they be repaired promptly?

Process Water. Manufacturers, food and beverage processors, schools, health care facilities, and laundries use substantial amounts of water in their processes. Reductions can be achieved in the amount of water used by installing water saving devices, implementing new or modified processes, and reusing water.

- Have process modifications that would use less or no water been evaluated for implementation? Have water-less processes been considered?
- Could rates be structured to reduce peak water demand?
- Will automatic valves and water level sensors be employed to turn water off when not in use and to provide the precise amount when needed?
- Will process water be recirculated until it is too dirty for use?
- Will process water be recycled onsite and returned to the process or used to meet other onsite needs (e.g., landscaping)? *

Landscaping. Landscaping plans tailored to the specific nature of the local environment can greatly reduce water use. Appropriate landscaping includes using water conserving plants in hot and dry regions. Landscape irrigation is also a key area where water use can be reduced.

President Clinton recently signed a Presidential Memorandum calling for the establishment of guidelines for Federal facility managers on how to implement water conservation techniques in conjunction with landscaping activities.

- Will vegetation be planted that is drought tolerant and uses low levels of water?
- Depending on the type of landscaping, is the most efficient type of water application specified for use?
- Will daytime watering be prohibited?
- Will automatic timers be employed, and will watering duration be monitored to prevent overwatering?
- Can non-potable, treated wastewater be used for irrigation? *

Other References

Maddaus, W.O. 1989. *Water Conservation*. American Water Works Association.

Water Efficiency: A Resource for Utility Managers, Community Planners, and Other Decisionmakers. 1991. The Water Program, Rocky Mountain Institute.

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*Indicates an environmental impact reduction opportunity.

POLLUTION PREVENTION/ENVIRONMENTAL IMPACT REDUCTION CHECKLIST FOR WATER USE

How Can Water Use Affect the Environment?

The procurement and delivery of water for domestic, commercial, and industrial use, as well as the treatment of wastewater generated by these users, affect the environment. Water procurement can affect the quality and quantity of both surface water and groundwater, cause land subsidence from groundwater overdraft, and destroy habitat. Water delivery systems can destroy habitat and ecosystems from canal and pipeline construction and consume energy for pumping. Wastewater affects surface water quality and habitats and requires energy to treat. The employment of water conservation techniques can reduce the environmental effects of water use.

What Questions Should Be Asked To Ensure That These Effects Are Minimized or Eliminated?

Executive Order 12902, Energy Efficiency and Water Conservation, directs all Federal agencies and facilities to improve their water efficiency. Every Federal facility is required to contribute toward agency water use reduction and conservation goals.

Heating and Cooling. A study by Denver Water, supplier to Denver, Colorado, determined that 48 percent of the water used by manufacturers is used for heating and cooling purposes. A significant amount of water use and wastewater production can be minimized by increasing the efficiency of heating and cooling equipment and by decreasing heating and cooling requirements.

- Will energy conservation measures be employed to reduce the need for heating or cooling?
- Will the most efficient heating and cooling equipment available be used to reduce water needs?
- Can air-cooled equipment be used instead of water-cooled?
- Will heating and cooling equipment be maintained according to manufacturer recommendations and will leaks be repaired in a timely manner? Proper maintenance can help reduce the use of water by this equipment.
- Will once-through cooled water be used? If once-through cooling is used, will the water be reused for irrigation or make-up water? Whenever feasible, once-through cooling should be eliminated from any facility design.

Sanitary and Kitchen Fixtures. Water conserving fixtures can significantly reduce water use in sanitary and kitchen facilities in commercial offices, industrial buildings, and residential dwellings.

- Are ultra-low flush toilets specified for installation?
- Will flow restrictors be installed on faucets and showers?
- Will notices be posted to encourage minimizing shower time and turning the tap off when the water is not needed?
- Will aerators be used on all faucets?

- Are there provisions to encourage facility employees to reduce motor vehicle use? These provisions can include installing bike racks and showers, providing shuttle service between the facility and public transportation stops, promoting carpooling by maintaining ride boards, and subsidizing public transportation costs.

Energy Production Facilities. The design, construction, and operation of energy production facilities presents a number of opportunities to reduce pollution and environmental impacts.

- In constructing or operating energy production facilities, will rate structures be considered that will reduce peak loads?

- Are co-generation activities included in facility design?

Other References

Northeast Sustainable Energy Association. 23 Ames Street, Greenfield, MA 01301. Telephone No. (413) 774-6051.

Rocky Mountain Institute. 1739 Snowmass Creek Road, Snowmass, CO 81654-9199. Telephone No. (303) 927-3851, Fax No. (303) 927-4178.

U.S. Department of Energy, Federal Energy Management Program. CE-44, 1000 Independence Avenue, SW, Washington, DC 20585. Telephone No. (202) 586-5772.

U.S. EPA, Energy Star Buildings Program. Telephone No. (202) 233-9146.

U.S. EPA, Energy Star Computers Program. Telephone No. (202) 233-9114.

U.S. EPA, Green Lights Program. Telephone No. (202) 233-9065.

POLLUTION PREVENTION/ENVIRONMENTAL IMPACT REDUCTION CHECKLIST FOR LANDSCAPING

How Can Landscaping Affect the Environment?

Landscaping wastes currently account for approximately 20 percent (or 31 million tons) of the municipal solid waste (MSW) generated in the United States each year. This makes landscape trimmings the second largest component (by weight) of the MSW stream. Because of their high bulk and density, landscaping wastes consume a disproportionate amount of landfill space. In addition, these wastes, as well as other organic matter disposed of in the landfill, can generate methane and acidic leachate when they decompose. When incinerated, the high moisture content and high nitrogen levels of these wastes can interfere with the combustion process and contribute to the formation of smog-causing nitrogen oxides.

What Questions Should Be Asked To Ensure That These Effects Are Minimized or Eliminated?

On April 26, 1994, President Clinton signed a Presidential Memorandum calling for the establishment of guidelines for Federal facility managers on how to increase the use of native species, reduce the use of chemical fertilizers and pesticides, implement water conservation techniques, and promote awareness of the environmental and economic benefits of better landscaping techniques. These guidelines will be proposed by a Federal interagency workgroup established by the Federal Environmental Executive. The following questions address the concept delineated in the Presidential Memorandum, as well as additional opportunities to prevent pollution and reduce waste generation associated with landscaping operations.

Ecosystem Concerns. Landscaping activities can affect the environment through the release of toxic pesticides and excess nutrients, as well as the destruction of wildlife habitat and ecologically sensitive areas. However, proper landscape design and maintenance can help reduce these environmental impacts and can help minimize the effects of other activities as well.

- Will landscape development be integrated with existing natural resources? Such integration may include the use of a Geographic Information System (GIS) that incorporates physical and natural features of the area to be developed (e.g., tidal and non-tidal wetlands, steep slopes, and natural riparian buffers). *
- Will the landscape plan incorporate the use of plants that require little water and minimal fertilizer, herbicide, and pesticide use?
- Does the landscape plan encourage the use of Integrated Pest Management (IPM)?
- Will the landscape plan ensure that rare, threatened, and endangered wildflowers and other species are adequately protected? *
- Does the landscape plan consider materials other than asphalt for constructing walkways across lawns (i.e., using wood chips, flag stones, and other materials that have less environmental impact than asphalt)?

* Indicates an environmental impact reduction opportunity.

- Will the landscape plan include the planting of primarily native trees, shrubs, and perennials? *
- Will the introduction of invasive species be avoided? *
- Will the plantings be arranged in a natural manner and in naturally associated groupings? *
- Does the landscaping plan incorporate features to minimize solar radiation or heat sinks, such as planting shade trees and avoiding overly large areas of asphalt? *
- Will the plant species used in the landscape plan provide food or cover for desirable wildlife? *
- Will the landscape plan call for fertilizing lawns only when grass roots will take up nutrients? These times are late summer-fall for cool season grasses and early summer for warm season grasses.
- Will lawns be watered at the optimal time of day to promote healthy growth and conserve water?
- Does the landscape plan take advantage of vegetation's natural properties? Planting shade trees near building windows can reduce energy consumption associated with air conditioning needs and serve as effective wind barriers.
- Will species of vegetation that support wetlands development be planted on the edges of waterbodies? These species may help break down pollutants carried in non-point source runoff and also can prevent soil and debris from polluting waterbodies.
- Will lawn areas be kept to a minimum with the remainder planted/retained as native meadows and woodlands to minimize air impacts associated with power maintenance equipment and the need for pesticides?
- Does the facility design reduce the impact of lighting on critical habitats and scenic areas?

Reducing Landscape Wastes. A number of steps can be taken during project planning, design, and operation and maintenance to reduce or avoid the generation of landscaping wastes. These techniques include landscape development and alteration, grass-cycling, composting, and mulching. They can be tailored to specific characteristics of a landscape, such as climate and geography, and can be mixed in any number of combinations.

- Will the landscape plan incorporate the planting of native and indigenous trees and plants that require less attention and maintenance? *
- Will trees and shrubs be pruned only on an as needed basis? *
- Will grass-cycling be practiced as part of project landscape maintenance operations? Grass-cycling is a process in which grass clippings are left in place on a lawn after mowing instead of being raked and bagged. Grass-cycling requires that no more than one third of the blade is cut off and that no more a 1-inch total be cut at any one time. This process improves lawn quality by returning

* Indicates an environmental impact reduction opportunity.

important nutrients from the decaying clippings to the soil and lawn. When grass-cycling is practiced, less money is spent on fertilizers, disposable collection bags, labor costs, and waste disposal. *

- Will composting be practiced as part of project landscaping maintenance operations? Composting is a process using microorganisms (generally bacteria or fungi) in the presence of oxygen and moisture to break down organic wastes into a humus-like product. Compost is a superior soil conditioner or mulch suitable for most landscaping and gardening uses. Using compost will help reduce reliance on phosphate and nitrogen fertilizers that may be detrimental to the surrounding ecosystems. Compostable materials include grass clippings, seaweed, leaves, sawdust, chipped or shredded brush, cow and horse manure, chipped or shredded logs, weeds, pine needles, hay, straw, shredded newspaper, and wool and cotton rags. Weeds with many seeds, diseased plants, and manure from meat-eating animals should not, however, be composted.

- Will mulching be practiced as part of project landscaping maintenance? Mulching is the practice of spreading or mixing organic material, such as wood chips, leaves, or compost, over soil surfaces. Mulch reduces moisture evaporation from the soil surfaces, reduces soil erosion and compaction from heavy rains, moderates soil temperature, provides optimal conditions for soil enhancing organisms, protects young tree trunks, and provides nutrients as it decays. Furthermore, mulch inhibits weed growth, thereby decreasing the need for constant landscaping care and weed disposal.

Landscape Product Purchasing and Management. Lawn and plant care products, such as fertilizers and pesticides, are also considered as wastes that result from landscape operations. Spoilage of these materials and the packaging left after use should be minimized to reduce an operation's impact on the environment.

- Will landscape products be purchased in bulk or concentrate to reduce packaging waste?

- Will strict inventory control practices be adopted to prevent material expiration and, thus, waste generation?

- Will the use of gas-powered landscape maintenance equipment (which account for 5 percent of our air pollution) be kept to a minimum? Executive Order 12844 calls on Federal facilities to increase their purchase of alternatively fueled motor vehicles.

Other References

"Presidential Memorandum for the Heads of Executive Departments and Agencies on Environmentally and Economically Beneficial Practices on Federal Landscaped Grounds." August 22, 1994. *Federal Register* Vol. 59, No. 161.

U.S. EPA. "Environmental Fact Sheet: Recycling Grass Clippings." July 1992. EPA/530-F-92-012.

U.S. EPA. "Environmental Fact Sheet: Yard Waste Composting." May 1991. EPA/530-SW-91-009.

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* Indicates an environmental impact reduction opportunity.

POLLUTION PREVENTION/ENVIRONMENTAL IMPACT REDUCTION CHECKLIST FOR PEST MANAGEMENT

How Can Pest Management Affect the Environment?

Pest management is often necessary to protect lawns, trees, shrubs, and crops from weeds, diseases, insects, and other animals. Pest management may also be used to control pest populations inside buildings and other structures. However, the same characteristics that make chemical pesticides effective in the control of pests often present risk of injury to humans, as well as non-target animals and plants. These characteristics also create the possibility of general environmental contamination. For the purposes of this checklist, the environmental impacts of pest management requirements will be evaluated on the basis of minimizing acute and chronic risks to populations onsite and downstream from the evaluated area. The selection of pest management techniques is directly related to pest, host, site, and state of development.

There are a large number of pest management techniques: cultural change, plant selection, exclusion, physical removal, repellents, biologics, conservation and augmentation of natural predators, and chemical pesticide application. New projects must be planned to minimize the need for chemical controls. All pest management methods, including chemical pesticides, may be used as part of a pest management program to control weed, disease, insect, and other animal damage to lawns, trees, shrubs, and crops. Chemicals may be required in managing structural pests, as well as controlling human and animal disease vectors. Potential side effects of the use of chemical pesticide products can include contamination of surface and groundwater, as well as negative impacts on human health and safety. Some pesticides are toxic in small quantities to humans and animals. While many pesticides break down in a few months, others may persist in the environment over time under certain conditions. For the purposes of this checklist, the term "pesticide" refers to herbicides, fungicides, germicides, insecticides, and other substances or mixtures that are used to prevent, destroy, repel, or mitigate any pest.

What Questions Should Be Asked To Ensure That These Effects Are Minimized or Eliminated?

On April 26, 1994, President Clinton signed a Presidential Memorandum calling for the establishment of guidelines for Federal facility managers on how to reduce the use of chemical fertilizers and pesticides. The memorandum also discussed the development of guidelines for other environmentally preferable landscaping practices. These guidelines will be proposed by a Federal interagency workgroup established by the Federal Environmental Executive. The following questions address the some of the concepts delineated in the Presidential Memorandum, as well as additional opportunities to prevent pollution and reduce waste generation associated with pest management.

General Concerns. Chemical pesticides are used as a part of pest management programs in the maintenance of lawns, crops, trees, shrubs, and structures. For many pests, alternatives to the use of traditional chemical products are available that are equally effective and are cost-competitive with chemical control methods.

- Will an Integrated Pest Management (IPM) program be implemented and supported with continuing personnel training? Facilities should consider implementing IPM programs to combine cultural, biological, and chemical techniques to control pests and minimize the use of toxic/leachable pesticide products. IPM practices can reduce the risk of exposure to chemical pesticides both on-site and in the general environment.

- Has the plan identified facility or project access to expertise in Integrated Pest Management?

- Will project construction, operation, and/or maintenance require the use of chemical pesticides as a part of a pest management program?

- Will the need for chemical pesticides be reduced through careful selection of pest resistant vegetation, plant and hardware selection to minimize requirements for irrigation, best mowing practices, and planned elimination of pest habitats (e.g., standing water that may attract mosquitoes, cracks and crevices in structures that will admit and harbor cockroaches)? It is important to consider the ecosystem and the compatibility of introduced chemicals with wildlife, including predators and beneficial insects.

- Are there less toxic pesticide alternatives? Local agriculture extension agencies, Master Gardener clubs, and lawn and landscape product suppliers often have information about best management practices (BMPs). For example, they will recommend the use of cultural and biologic strategies to avoid the use of chemical pesticides.

- Will the facility design and operation accommodate pest management practices that are less susceptible to offsite transport of chemicals, such as pesticides and fertilizers (thereby reducing the potential for groundwater contamination)?

- Will less persistent pesticides be identified and used only when needed, in spot application to specific targets, and at minimum required application levels?

Material Storage, Handling, and Use Concerns. The storage, handling, and use of pesticides can lead to environmental degradation through the interaction of incompatible chemicals due to improper storage, expiration of materials (which subsequently become wastes), spills and other uncontrolled releases, employee exposure to toxic chemicals, and pesticide runoff into environmentally sensitive areas.

- Will precautions be taken to purchase only as much pesticide as will be needed for a season and limit the amount of pesticides purchased? Unused or mishandled pesticides may expire and need to be handled as waste (certain waste pesticide mixes are considered hazardous). Some leftover pesticides may, however, be used the following year if properly stored. Containers should be sealed or closed and kept in a dry, well-ventilated area that is locked to prevent unauthorized and child access. All containers storing pesticides should be clearly labeled with product name and all U.S. EPA and locally required information, including hazards and expiration dates.

- Will employees be trained in the proper storage, handling, and disposal of pesticides? Employees should be instructed on how to maintain pesticide supplies properly and to wear protective equipment when working with pesticides to limit exposure. *

- Will the facility use safe pesticide mixing techniques? Safe mixing techniques include ensuring that pesticides are mixed in clear and open areas that can be easily cleaned and avoiding mixing upstream from waterbodies (including drains leading to surface water bodies and groundwater aquifers). Other techniques include mixing the least amount of pesticide possible and using closed mixing systems that reduce the potential for release and exposure. *

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* Indicates an environmental impact reduction opportunity.

- Does the facility have a pesticide spill prevention and control plan? Pesticide spill prevention and control plans should be prepared to teach employees how to prevent spills. These plans should be kept onsite for employee reference should a spill occur.

- Will precautions be taken to minimize the amount of pesticide mixed and applied? Facilities should have a program to ensure that employees are aware of when, where, and how much pesticide is necessary for a given pest control situation. The program should also provide employees with training in how to apply pesticides, requirements for posting and notification, methods to reduce application overlapping, and instruction to avoid exceeding recommended application rates.

- Will the facility ensure that pesticides are applied only under the optimal weather conditions (e.g., not spraying on windy days and just before or after heavy rainfall)?

- Does the facility pesticide application program require the use of techniques to minimize the amount of pesticide applied? These techniques include using applicators (e.g., proper orifice spray nozzles at the correct pressure) to minimize the amount of pesticide needed to treat a given area and control pesticide droplet size and deposition, as well as following correct application timing and sequencing procedures.

- Will the facility employ techniques to reduce pesticide runoff? Pesticide runoff and leachate can negatively affect groundwater and surface waters and can be reduced by practicing spot application whenever possible, using row banding application techniques to limit the amount of pesticides applied, using contact pesticides that do not have to be incorporated into the sod, and not spraying in potentially sensitive areas.

- Will measures be taken to minimize/eliminate the effects of pesticides on non-target species, such as local, resident wildlife and beneficial insects? *

Pesticide Application Residuals Concerns. The potential for pesticide application activities to affect the environment does not end after a pesticide has been applied. The residuals resulting from the use of pesticides, such as wastewater and empty pesticide containers, must be properly managed to ensure that the environment is not negatively affected.

- Will the facility minimize the number of pesticide containers requiring disposal? Options to reduce the volume of this waste stream include purchasing products in bulk, refillable or returnable containers, and products with water soluble packaging.

- Will all empty pesticide containers be triple-rinsed and disposed of properly? Federal regulations require rinsing empty pesticide containers at least three times before disposal. Pesticide containers must not be buried or burned, even after triple-rinsing. Rinsed containers can be disposed of at a sanitary landfill or often may be returned to the supplier for reuse. Reusable containers reduce the need for rinsing and disposal. *

- Will the facility properly manage pesticide rinse waters? Pesticide-contaminated rinse waters can be used in future pesticide mixing and application as an alternative to disposal, or can be applied in onsite landscape applications. *

* Indicates an environmental impact reduction opportunity.

POLLUTION PREVENTION/ENVIRONMENTAL IMPACT REDUCTION CHECKLIST FOR BUILDING/HOUSING CONSTRUCTION

How Can Building/Housing Construction Affect the Environment?

Wastes associated with building/housing construction include unused and excess material generated during site excavation, site clearance, construction, and renovation activities. These wastes may be rubble (concrete, bricks, and asphalt), wood and wood products, plaster, metals, plastics, and insulation. These materials (commonly referred to as C&D debris) comprise approximately 15 to 30 percent of all waste disposed of in landfills. Further, some of these waste products may contain toxic constituents that pose a risk to human health and the environment. Many local governments have passed ordinances that restrict or prohibit the disposal of C&D debris in landfills and require the recycling of many of these materials. In addition, purchasing decisions associated with building/housing construction projects can affect the amounts of waste generated, as well future energy requirements (e.g., from lighting and heating).

Also see checklists on Ecosystem Preservation and Protection, Siting, Landscaping, Pest Management, and Energy Management.

What Questions Should Be Asked To Ensure That These Effects Are Minimized or Eliminated?

Ecosystem Concerns. The clearing of lands for construction can lead to the loss of wildlife habitats, erosion and sedimentation associated with the use of heavy machinery, loss of native plant life, and contamination of soils and surface and groundwater. However, proper design and planning can help reduce these impacts.

- Is the construction project necessary? Is the project over-designed? In some cases, the construction of additional structures is not needed and minor alterations to existing facilities may be sufficient.
- Have attempts been made to avoid construction in environmentally sensitive areas (such as wetlands and threatened or endangered species habitats)? *
- Are specifications for construction practices designed to control and exclude pest entry in contained habitats? *
- Does the construction contract specify that contractors should cause the least possible disturbance to the site's vegetation? For example, under certain circumstances, it may be possible to preserve individual trees or stands of old-growth that would otherwise be destroyed.
- Does the construction plan provide for erosion and sediment control during construction as well as after? Uncontrolled soil erosion can have adverse effects on local waterbodies and aquatic life.
- Will soil excavated from the construction site be reused? Topsoil can be respread in areas to be landscaped to enhance plant health. *
- Does the plan include the revegetation of areas disturbed by construction? *

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* Indicates an environmental impact reduction opportunity.

- Is there a plan to reduce the use of materials containing constituents that can negatively affect the environment?

- Is there a spill control and countermeasure plan to properly address spills of hazardous construction materials?

- Will hazardous materials be stored properly at the construction site? Hazardous materials should be kept in storage buildings (with secondary containment and hard stands) located away from the active construction zone. Examples of hazardous materials typically found at construction sites are petroleum products (lubricating oils and greases), fuels (gasoline, kerosene), solvents, paints, batteries, and miscellaneous equipment maintenance supplies.

Procurement Concerns. Environmentally sound purchasing decisions are an important element of pollution prevention, helping reduce the amount of waste generated by a building/housing construction project. In addition, the purchasing of recycled-content material helps support markets for materials collected for recycling.

Executive Order 12873 directs all Federal agencies to review and revise their specifications, product descriptions, and standards to increase their purchase of environmentally preferable and recycled products.

- Will the project include the use of durable, long-lasting materials that will not need to be replaced as often, thereby reducing the amount of construction waste generated over time?

- Are there provisions for the proper storage of construction materials to reduce the amount of waste caused by damage or exposure to the elements?

- Will perishable construction materials (such as paints) be purchased incrementally to ensure reduced spoilage of unused materials?

- Will the project use building materials that have minimal packaging to avoid the generation of excessive packaging waste?

- Will the project use building materials that are produced locally to avoid energy use and pollution generated from transportation?

- Will the project use construction materials containing recycled content when possible and in accordance with accepted standards? Examples of recycled-content materials include concrete containing fly ash and thermal insulation containing cellulose (i.e., recovered newspaper with fire retardant). *

- Does the construction plan include the use of alternative, environmentally preferable construction materials? Alternative construction materials include lumber products containing recycled plastic and/or wood, lead-free and low-VOC paints and coatings, and recycled steel for use in building frame applications.

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* Indicates an environmental impact reduction opportunity.

- Letter 4 –
United States Environmental Protection Agency
Response to Comments

4-A The general concerns regarding relationship of the document to executive orders and considerations of pollution prevention, energy efficiency, water conservation, hazardous waste minimization, and solid waste reduction and recycling are addressed following the specific comments below. The lack of specific references to these executive orders was not intended to imply that no consideration was given to these orders. The Navy's environmental guidance document OPNAVINST 5090.7B governing the preparation of this EIS incorporates the requirement of these executive orders.

4-B The concerns expressed regarding pollution prevention and air conformity are addressed following the specific comments below.

4-C The Navy concurs that pollution prevention measures should be incorporated into the design and construction of the proposed facilities, and the EIS is considerate of these issues. The following text has been added to Section 2.2.3 of the EIS:

> "In accordance with Navy requirements (OPNAVINST 5090.1B), all facility construction would be required to incorporate energy efficiency and water conservation techniques and to comply with the pollution prevention program, comprehensive pesticide compliance program, solid waste management plan, and hazardous waste management program of each installation."

Please see sections 4-11 and 4-12 of the EIS for a discussion of issues related to hazardous materials management.

4-D Section 2.2.3 has been revised to reflect that source reduction measures, in accordance with OPNAVINST 5090.1B, would be incorporated into the project at the time the decision is made to proceed with construction.

4-E At the time the decision is made to proceed with construction, energy efficiency measures would be incorporated into the design and construction of the proposed facilities, according to OPNAVINST 5090.1B requirements.

4-F Right-to-Know and Pollution Prevention are extensively discussed in OPNAVINST 5090.1B, and Executive Order 12856 is incorporated therein. These considerations will be included in the design and construction of the proposed facilities, per requirements of OPNAVINST 5090.1B.

4-G As required by federal and state law, NAS Lemoore and NAF El Centro have prepared pollution prevention plans dealing with hazardous waste minimization. These hazardous waste minimization measures would continue with the introduction of the F/A-18E/F. Please see the text added to Section 2.2.3 of the EIS.

Hazardous waste disposal for operations at NAS Lemoore has been reduced by nearly 35 percent from fiscal year 1994 to fiscal year 1997. The pollution prevention efforts at NAS Lemoore were recognized by the SECNAV Pollution Prevention Award for 1995. NAS Lemoore received the

White House Closing the Circle award for P2 in 1997 and has been nominated for the SECNAV Pollution Prevention award again this year.

4-H Per OPNAVINST 5090.1B and Executive Order 12902, reasonable water conservation measures would be incorporated into construction where appropriate. Please see the text added to Section 2.2.3 of the EIS.

4-I The analysis presented in the final EIS is conservative to insure an adequate assessment of the impact. The projected increases in solid waste from personnel and operations at NAS Lemoore and NAF El Centro of 65 percent and 540 percent, respectively, are based on strict percentage increases in waste generation over current levels. Current levels of production include solid waste reduction measures already in place at both facilities. Waste reduction measures may reduce waste generation at both facilities such that increases are below the 65 and 540 percent levels presented in the EIS.

NAS Lemoore has had an active solid waste management plan for a number of years and has achieved a nearly 40 percent reduction in solid waste disposal by use of recycling programs. NAS Lemoore recycles 20 percent more per ton of waste generated than the surrounding communities. Text has been added to Section 3.10 to indicate that the alternative bases would continue to implement solid waste reduction measures with the introduction of the F/A-18E/F.

4-J The text in Solid Waste Collection and Disposal in sections 4.10.1 and 4.10.2 has been revised to include the following text: "A comprehensive solid waste reduction and recycling program for recyclable materials will continue to be implemented for all F/A-18E/F related military activities and personnel, as required by AB 939 and OPNAVINST 5090.1B."

4-K Directive 4715.1 requires DOD to establish and maintain safe, effective, and environmentally sound integrated pest management programs and to ensure that DOD pest management programs achieve, maintain, and comply with all applicable Executive Orders and federal, state, and local statutory and regulatory requirements. All current pesticide applications are performed in strict compliance with existing DOD instructions. DOD guidelines for pest management are approved by the EPA, and base pest management plans are in strict compliance with these guidelines. All pesticides used on base are EPA-approved. New pesticides are not being considered as part of the proposed action.

The Navy agrees that use of pesticides should be minimized and that less toxic substances should be used when feasible. DOD has developed goals on reducing pesticide use by 50 percent over the next few years. Both of the proposed sites for basing the F/A-18E/F aircraft will have established procedures to meet the new DOD reduction goals and will continue to meet all applicable pesticide laws. Please see Section 3.12 for a discussion of current and past pesticide use on each of the alternative bases.

4-L The concerns expressed in the comment are valid; however, they are properly considered under the pest management plan for each facility, which takes into account such issues as sensitive receptors in the area and application frequency. The pest management plan adheres to all appropriate regulations pertaining to pesticides and is developed from EPA-approved guidelines.

4-M Discussion of Executive Order 13045 is presented in Section 6.5 of the EIS. As stated in the response to comment 4-L, the Navy and its contractors at each of the proposed facilities adhere to the base pest management plan to ensure safe and responsible use of all pesticides. The pest

management plan may list permitted application procedures for the specific base. The Navy or its contractors also follow application directions found on EPA-registered labels.

4-N The Navy has been negotiating with FAA to establish a legally enforceable transfer of conformity-related emission offsets that will fully compensate for emission increases associated with the proposed action. The final EIS includes a memorandum from the FAA to the Navy establishing that transfer.

4-O The draft EIS included a draft conformity determination, complete with supporting technical analyses. The draft EIS, including the draft conformity determination, followed NEPA public and interagency review procedures. This approach is encouraged by EPA's conformity rule. The SJVUAPCD has been kept informed of the Navy's intent to arrange conformity-related offsets, as outlined in conformity mitigation measures 1a and 1b, and has indicated support for that approach. Because the public notice concerning availability of the draft EIS did not specifically mention that a draft conformity determination was included, a notice of a 30-day comment period on the final draft conformity determination will be included in the notice of availability of the final EIS.

4-P The sentence has been revised as follows: "According to the NAF El Centro Hazardous Waste Annual Report, the total amount of hazardous waste generated in 1997 was approximately 432 tons (392 tonnes). These wastes were stored, recycled off-site, or disposed of off-site. The wastes consisted primarily of asbestos, sludge, and ordnance (US Navy 1997p)."

STATE CAPITOL
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(916) 445-4641

2550 MARIPOSA MALL
SUITE 2016
FRESNO, CA 93721
(209) 264-3078

901 TOWER WAY
SUITE 202
BAKERSFIELD, CA 93309
(805) 323-0442

California State Senate

SENATOR
JIM COSTA
SIXTEENTH SENATORIAL DISTRICT

VICE-CHAIRMAN
SENATE MAJORITY CAUCUS

COMMITTEES
CHAIRMAN
COMMITTEE ON AGRICULTURE & WATER RESOURCES

MEMBER
BUDGET & FISCAL REVIEW
FINANCE, INVESTMENT & INTERNATIONAL TRADE
HOUSING AND LAND USE
TRANSPORTATION
CALIFORNIA WORLD TRADE COMMISSION

January 7, 1998

Mr. Surinder Sikand, Environmental Planning Branch
Commanding Officer, Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Dear Mr. Sikand:

Please accept this letter indicating my support for the selection of the Naval Air Station Lemoore (NASL) as the site for the location of F/A-18E/F Aircraft on the West Coast.

First, I believe, the selection of NASL is the most economically sound because the facility is best prepared to receive the F/A-18E/F Aircraft with the least additional cost of equipment and personnel.

5-A

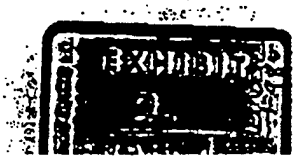
Most importantly, however, is expansion projects like this one continue to receive strong support from both community leaders and residents. During my years representing this area, I have observed the productive relationship between Kings County, the City of Lemoore, and the Navy. It is this kind of enthusiastic support from the local community that ensures that projects such as this one are successful.

Thank you for your time in hearing my testimony this evening. Your favorable consideration of the selection of NASL for this addition would be most appreciated. Please call me or my office if I can be of further assistance on this matter.

Sincerely,

JIM COSTA
Member of the Senate
Sixteenth District

JC:se



- Letter 5 –
California State Senator Jim Costa
Response to Comment

5-A Thank you for your interest in and support of the F/A-18E/F project.

Letter 6

STATE OF CALIFORNIA — THE RESOURCES AGENCY
PETE WILSON, Governor

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO 94296-0001
) 653-6624
: (916) 653-9824

December 19, 1997
REPLY TO: USN971114A

Louis S. Wall, Cultural Resources Program Coordinator
Environmental Planning Branch
Department of the Navy
Naval Facilities Engineering Command
900 Commodore Drive
SAN BRUNO CA 94066-5006

Re: F/A-18E/F Aircraft and Personnel Support Facility Development, Naval Air Station, Leemore, Kings County.

Dear Mr. Wall:

Thank you for submitting to our office your November 10, 1997 letter and supporting documentation regarding your proposed development of facilities supporting the basing of new F/A 18-E/F aircraft and their supporting military and civilian personnel and families at Naval Air Station (NAS) Leemore, Kings County. The project will involve the construction of new buildings on vacant base parcels or the modification of existing structures located at NAS Leemore.

You are seeking our comments on your determination of the effects the proposed project will have on historic properties in accordance with 36 CFR 800, regulations implementing Section 106 of the National Historic Preservation Act. Our review of the submitted documentation leads us to concur with your determination that the proposed project, as described, will not involve historic properties. 6-A

Thank you for seeking our comments on your project. If you have any questions, please contact staff historian Clarence Caesar at (916) 653-8902.

Sincerely,

Dwight A. Dutschke
for
Cherilyn Widell
State Historic Preservation Officer

- Letter 6 –
State of California, Office of Historic Preservation
Response to Comment

6-A The comment that concurs with the EIS determination that the proposed project will not involve historic properties is noted.

Letter 7

STATE OF CALIFORNIA — RESOURCES AGENCY PETE WILSON, Governo

DEPARTMENT OF PARKS AND RECREATION

Colorado Desert District
200 Palm Canyon Drive
Borrego Springs, CA 92004

January 29, 1998

Commanding Officer
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006
Attention: Mr. Surinder Sikand, Environmental Planning Branch, Code 70311

Re: Draft Environmental Impact Statement for Development of Facilities to Support Basing US Pacific Fleet F/A-18E/F Aircraft on the West Coast of the United States

Dear Mr. Sikand:

We have had the opportunity to review the referenced DEIS, which proposes replacing the existing 72 F/A - 18C/D aircraft based at NAS Lemoore with 164 F/A-18E/F's, resulting in a net increase of 92 aircraft, or 128%. Although the DEIS states that the proposed action would increase flight operations in general, the document only discusses impacts at and around the basing site, and fails to discuss increased impacts in overflight routes. 7-A

We are particularly concerned with this apparent oversight, as VR-1257, currently used by aircraft out of Lemoore, passes directly over Anza-Borrego Desert State Park (ABDSP). ABDSP, a 600,000-acre state park in eastern San Diego County, is the largest unit in the California State Parks system. Since park lands began to be acquired here in 1933, ABDSP has been renowned for the quality of its natural resources, which include the Federally-proposed Endangered Peninsular Bighorn Sheep. It is estimated that only about 280 of these majestic animals still exist in their U.S. range, a narrow corridor passing from Mt. San Jacinto through ABDSP to the Mexican border. 7-B

VR-1257 zig-zags over the park, crossing in the north over Coyote Canyon at an approximately 90° angle. Coyote Canyon is a particularly sensitive riparian zone which provides valuable habitat not only for the bighorn sheep, but for other endangered and threatened wildlife species. Because of its beauty, this picturesque and accessible canyon has for many years attracted thousands of backpackers, campers, equestrians, mountain bikers and vehicular recreationists. In 1975, recognizing the adverse cumulative impacts of human presence on the fragile resources, the Department of Parks and Recreation (DPR) began closing Coyote Canyon to all recreational use each summer from June 15 to September 15 in order to protect bighorn sheep watering areas along the creek. The U.S. Fish and Wildlife Service considers the Lower Willows area of Coyote Canyon as habitat critical to the success of the Least Bell's Vireo, a Federally-listed Endangered species. In

1996, DPR permanently closed a 3.1-mile stretch of road in Coyote Canyon to motorized vehicles and extended the summer closure of the entire canyon by 30 days. In addition to ground-level impacts addressed in the park's *Coyote Canyon Public Use Plan* published the previous year, the long-term use of the canyon as a low-level overflight corridor for aircraft was cited as an activity with potentially adverse impacts on the biological resources.

Coyote Canyon comprises approximately 100,000 acres (or 1/6) of Anza-Borrego Desert State Park, and is also designated as State Wilderness. California has issued an advisory of 2,000 feet for aircraft flying over wilderness areas. Although an advisory is not a law, the recommendation is particularly important in sensitive areas like Coyote Canyon. In spite of the fact that VR-1257 (on paper) appears to cross Coyote Canyon at a 90° angle, most military aircraft choose to turn and fly directly down the canyon, frequently at altitudes of less than 200 feet. This activity, while brief in duration, can be damaging and disruptive to the bighorn sheep, especially during lambing season, as well as to nesting Golden Eagles, other wildlife, and human beings seeking the solitude of a wilderness experience.

For several years, we have been working with the military and other Desert Managers to assess the impacts of VR-1257 on ABDSP and other desert lands. Our staff has attended meetings of the Western Pacific Airspace/Range Management Council and made presentations on the natural resource impacts in Coyote Canyon. We have discussed the issue directly with U.S. Navy personnel responsible for managing the overflight routes. At this time, it appears that any expansion of the NAS Lemoore aircraft fleet, and accompanying training operations, would only exacerbate an already problematic issue. Rather than increase the number of aircraft and flight operations over the State Park, which would be detrimental to wildlife, recreationists and the wilderness experience, we would like to see the DEIS discuss alternatives. These alternatives would include, at a minimum, raising the flight floor over the State Park to an elevation which reduces impacts to an insignificant level, and rerouting flights over the State Park to other routes outside the Park boundary. 7-C

More importantly, the DEIS fails to address any of the impacts that this increased fleet might have outside of the immediate basing site. We urge the Department of the Navy to include a discussion of these factors in the DEIS, so that they may be considered in the approval process for this proposal. If you have any questions about this matter, please contact me at (760) 767-4037. Thank you for giving us the opportunity to comment. 7-D

Sincerely,

David H. Van Cleve
District Superintendent

- Letter 7 –
State of California, Department of Parks and Recreation
Response to Comments

7-A The EIS has been revised to include a description of aircraft overflight patterns in the R-2508 Airspace Complex and in the VR-1257 MTR over Anza-Borrego Desert State Park. See sections 3.1 and 4.1 of the final EIS.

7-B VR-1257 is a low-level military training route that has been developed by the Department of Defense and the FAA. The route is scheduled by NAS Lemoore but is used by all branches of the military. Operations are permitted below 1,500 feet AGL along VR-1257, except within Joshua Tree National Park, where the Navy has a self-imposed 1,500-foot AGL limit. VR-1257 also crosses Anza-Borrego Desert State Park, where flight altitudes between 200 and 1,500 feet AGL are permitted. Discussion of the VR-1257 MTR has been added in sections 3.1, 4.1, 3.7 and 4.7 of the final EIS.

Flight levels along VR-1257 cannot be raised above 1,500 feet AGL without the concurrence of all affected branches of the military and approval by the FAA. Approval of such a change would be questionable due to conflicts arising with other VFR routes above 1,500 feet AGL. The only options available to the Navy to address these concerns are raising the altitude floor to 1,500 feet AGL while above the Anza-Borrego Desert State Park or modifying the route. Either of these actions would be outside the authority of the Navy and beyond the scope of this EIS. The Navy has forwarded this letter to Commander Strike Wing, US Pacific Fleet, NAS Lemoore, CA 93246-5022 for consideration.

See the response to comment 3-B for a discussion of the Peninsular bighorn sheep.

7-C The VR-1257 is an FAA-designated low-level training route. Use of this route by Navy and other military aircraft is permitted under this designation, but modification of this route is not part of the proposed action. Modification of the VR-1257 MTR requires a detailed assessment by the FAA and all branches of the military who would be affected by such a change. Modification of this route is beyond the scope of this EIS. The Navy remains willing to discuss issues of mutual interest with land managers. Please see Section 3.1 for a discussion of Anza-Borrego Desert State Park, Joshua Tree National Park and surrounding desert lands.

7-D Please see the response to comment 7-A above.

Letter 7A

STATE OF CALIFORNIA — THE RESOURCES AGENCY PETE WILSON, Governor

DEPARTMENT OF PARKS AND RECREATION
Colorado Desert District
200 Palm Canyon Drive
Borrego Springs, CA 92004
(760) 767-4037

January 26, 1998

Commanding Officer
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006
Attn: Mr. Surinder Sikand, Environmental Planning Branch, Code 70311

Dear Mr. Sikand:

We have received information that the US Navy has released a draft plan to increase the fleet of F-18's at Lemoore Naval Air Station. Anza-Borrego Desert State Park (a unit of California State Parks) has not received a copy of that draft plan.

VR-1257, currently used by aircraft out of Lemoore, passes directly over Anza-Borrego Desert State Park, in San Diego County. We have been working with the military and other Desert Managers to assess the impacts of VR-1257 on this and other desert lands. If there is such a plan, we request the opportunity to review it as soon as possible. If such a plan has been circulated for review already, we request that no determination be made under NEPA until we have had the opportunity for comment on the draft plan. 7A-A

If you have any questions about this matter, please contact me at (760) 767-4037. Thank you for your attention to this matter.

Sincerely,

David H. Van Cleve
District Superintendent

- Letter 7A –
State of California, Department of Parks and Recreation
Response to Comment

7A-A Please see the response to the California Department of Parks and Recreation, comments 7-B and 7-C, regarding the VR-1257 MTR. All those who have commented on the draft EIS will receive a copy of the final EIS. After publication of the final EIS, a 30-day public review follows to allow for additional comments. The Navy will not issue a record of decision for the proposed action until this review period has ended.

Letter 8

COUNTY OF KINGS
BOARD OF SUPERVISORS

GOVERNMENT CENTER HANFORD, CALIFORNIA 93230 (209) 582-3211 EXT.2362
Rose Martinez, Clerk of the Board of Supervisors

AGENDA ITEM

January 20, 1998

TAPE: 98-001	READING: 2125	FILE NO. 98-019

SUBMITTED BY: Administration - Allison Picard

SUBJECT: F/A-18E/F AIRCRAFT AT LNAS

RECOMMENDED ACTION: Approve a resolution supporting the location of these aircraft at Lemoore Naval Air Station (LNAS)

FISCAL IMPACT: None to County Budget; would positively effect local economy

BACKGROUND:

As your Board is aware, Lemoore Naval Air Station is being considered by the Navy for the location of 164 F/A 18E/F aircraft and associated military personnel and their families. While LNAS is the preferred site, El Centro i also being considered for this placement. The Public Hearing process is underway, and a resolution from th County is recommended to be submitted in support due to the obvious benefit which would result for the loca economy. If approved, it will be submitted into the public record.

A draft resolution is attached for your Board's approval.

BOARD ACTION: APPROVED AS RECOMMENDED: ✓ OTHER: _____

ROLL CALL: Lockhart, Neves, Rachford, Taylor, Barba - AYE

[Reference: See Resolution No. 98-003, which by reference hereto, is made part of these minutes.]

I hereby certify that the above order was passed and adopted on

_____, 1998.

ROSE MARTINEZ, Clerk to the Board of Supervisors

BEFORE THE BOARD OF SUPERVISORS
OF THE COUNTY OF KINGS, STATE OF CALIFORNIA
****

RESOLUTION NO. 98-003

IN THE MATTER OF
SUPPORT FOR F/A-18E/F AIRCRAFT AT LNAS/

WHEREAS, Kings County has actively supported expansion at Lemoore Naval Air Station (LNAS) and recognizes the positive impact on our local economy the base community provides, and

WHEREAS, the Navy is considering placement of 164 F/A18 E/F aircraft at LNAS and is currently soliciting public input on this proposal, and

WHEREAS, Kings County has enjoyed a long standing positive association with LNAS and a continued constructive relationship is anticipated which should facilitate the transfer of these aircraft to LNAS.

NOW, THEREFORE, BE IT RESOLVED that the Kings County Board of Supervisors do hereby advocate for the transfer of the F/A-18E/F aircraft to LNAS and pledge our continued support in assisting the Navy in achieving its goals.

THE FOREGOING RESOLUTION was adopted upon motion by Supervisor Lockhart, seconded by Supervisor Neves, at a regular meeting held January 20, 1998, by the following vote:

8-A

AYES: Supervisors Lockhart, Neves, Rachford, Taylor, Barba
NOES: None
ABSENT: None

/s/ Tony Barba
Chairman of the Board of Supervisors
County of Kings, State of California

WITNESS my hand and seal of said Board of Supervisors this 20th day of January, 1998.

/s/ Rose Martinez
Rose Martinez
Clerk of said Board of Supervisors

- Letter 8 –
Kings County Board of Supervisors
Response to Comment

8-A Thank you for your interest in and support of the F/A-18E/F project.

LEMOORE
CALIFORNIA
119 Fox Street • Lemoore, California 93245 • (209) 924-6700 • FAX (209) 924-9003

January 23, 1998

Commanding Officer
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Dear Sir,

Attached please find a resolution passed unanimously last night by the Lemoore City Council in support of F/A – 18E/F stationing at Naval Air Station Lemoore. We are in total support of NAS Lemoore as the Master Jet Base for the Western United States. 9-A

Please convey our enthusiasm to both Department of the Navy and Department of Defense.

Sincerely,

Steven L. Froberg
City Manager

Enclosure

RESOLUTION NO. 9804

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LEMOORE SUPPORTING THE LOCATION OF THE F/A 18 E/F AT NAVAL AIR STATION LEMOORE

At a Regular Meeting of the City Council of the City of Lemoore duly called and held on January 20, 1998 at 7:30 p.m. on said day, it was moved by Councilmember Lee, seconded by Councilmember Silviera and carried that the following Resolution be adopted:

WHEREAS, Naval Air Station Lemoore has been integral part of the Lemoore community for more than thirty years; and

WHEREAS, the City of Lemoore hereby announces its support for the location of the new F/A 18 E/F squadrons at Naval Air Station Lemoore; and

WHEREAS, the City of Lemoore receives benefit in the way of increased sales tax, increased spending within the community, and increased population from the additional personnel stationed at Naval Air Station Lemoore; and

WHEREAS, the City of Lemoore has long enjoyed an outstanding relationship with Naval Air Station Lemoore and is dedicated to maintaining this effective relationship.

Passed and adopted at a Regular Meeting of the City Council of the City of Lemoore held on the 20th day of January, 1998 by the following vote:

AYES: Lee, Silviera, Luis, Lahodny, Martin

NOES: None

ABSENT: None

ABSTAINING: None

APPROVED:

Ed Martin, Mayor

ATTEST:

Helen M. Murray, City Clerk

CERTIFICATE

STATE OF CALIFORNIA)
COUNTY OF KINGS)
CITY OF LEMOORE)

I HELEN M. MURRAY, City Clerk of the City of Lemoore, do hereby certify that the foregoing Resolution was passed at a Regular Meeting of the City Council held on the 20th day of January, 1998.

DATED: January 21, 1998

Helen M. Murray
City Clerk

- Letter 9 –
City of Lemoore
Response to Comment

9-A Thank you for your interest in and support of the F/A-18E/F project.

Letter 10

HANFORD ELEMENTARY SCHOOL DISTRICT
714 N. WHITE STREET • P.O. BOX G-1087 • HANFORD, CALIFORNIA 93232 • (209) 585-2265

December 29, 1997

Commanding Officer
Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Attn: Mr. Surinder Sikand
Environmental Planning Branch
Code 70311

Re: Written Comments
Draft EIR for the location of F/A-18E/F Aircraft on the West Coast

Information found on Page #3-34 of the Draft EIR for the Hanford Elementary School District should be updated as follows:

> The Hanford Elementary School District is made up of seven elementary schools (grades K-6) and two junior high schools (grades 7-8), with 4,973 students enrolled in the Fall of the 1997-98 school year. Enrollment at the elementary schools is over capacity. The District is currently leasing 30 portable classrooms and plans to add 10 more for the 1998-99 school year.

10-A

If you have any questions, please contact me at (209) 585-2231.

Sincerely,

Nancy White

Nancy White
Director of Fiscal Services

NW:bw

SUPERINTENDENT JOE SIMAS

- Letter 10 –
Hanford Elementary School District
Response to Comment

10-A The text in Section 3.3 of the final EIS has been revised to incorporate these changes.

Letter 11

CENTRAL UNION SCHOOL DISTRICT

Joan F. Gusinow, Ph.D
Superintendent
P.O. Box 1339
NAS LEMOORE, CALIFORNIA 93245-1339

15783 Eighteenth Avenue
LEMOORE, CALIFORNIA 93245
Telephone (209) 924-3405
Fax (209) 924-1153

BOARD MEMBERS
Margaret Brown
Jeffrey Gilcrease
Ceil Howe, Jr.
Larry Jones
Paul Newton
Olivia Reynoso
Janice Zinsmeyer

January 27, 1998

Commanding Officer
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 94066-5006

Attention: Mr. Surinder Sikand
Environmental Planning Branch, Code 70311

Dear Mr. Sikand:

The Central Union School District supports the 164 F/A-18EF aircraft, locating associated military personnel and family members, and providing associated training functions at the Lemoore Naval Air Station. The District has two nationally recognized, Blue Ribbon Award Winning schools on the Lemoore Naval Air Station. The increased population and additional funding would certainly give our students continued quality education. The community would benefit by jobs, the military payroll and help increase the economy in this area. 11-A

Therefore, we are asking your consideration regarding this matter for the naval facility, community and schools.

Thank you.

Sincerely,

Joan F. Gusinow, Ph.D.
Superintendent

JFG:ls

- Letter 11 –
Central Union School District
Response to Comment

11-A Your interest in and support of the F/A-18E/F project on behalf of the Central Union School District is noted.

Westlands Water District
3130 N. Fresno Street, P.O. Box 6056, Fresno, California 93703-6056, (209) 224-1523, FAX: (209) 241-6277

January 8, 1998

Commanding Officer
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Attention: Mr. Surinder Sikand, Environmental Planning Branch (Code 70311)

Gentlemen:

Subject: Comments on the Draft Environmental Impact Statement for the Development of Facilities to Support US Pacific Fleet F/A-18E/F Aircraft

Westlands Water District is providing the following comments for the above referenced DEIS. Westlands has reviewed similar documents relating to increasing the number of squadrons based at NAS Lemoore. During past correspondence, copies enclosed, we have stated that we may not always be able to deliver the 3,000 acre-feet of water under the contract between the Navy and Westlands. Westlands noted that we may have to ask our M&I customers to share in future contract water supply shortages.

These comments are directed to the water supply issues as identified in the DEIS prepared to analyze the impacts resulting from the proposed development of facilities for F/A-18E/F aircraft squadrons. In particular we reference sections 3.10.1 (pages 3-96 and 3-97) and environmental consequences section 4.10.1 (pages 4-63 and 4-64).

The third paragraph under "NAS Lemoore Alternative" titled "Water Supply Systems" on page 3-96 outlines the current water supply system at NAS Lemoore. Continuing on page 3-97, it is stated, "NAS Lemoore's current annual contract with Westlands guarantees the base 977 million gallons of water per year." Clarification about the contract between Westlands and the Navy is necessary at this point.

Please refer to the enclosed copy of page 3 of the Water Service Contract No. N62474-72-C-4013 between the Navy and Westlands. Note that section 4., paragraphs b. and d., contain deficiency provisions. Westlands has not yet had to impose those provisions due to the availability of sufficient Contract water. However, it is likely that in the future, this will no longer be the case, and the Navy can expect water supply shortages. 12-A

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Westlands has reviewed its policy with regard to the allocation and delivery of non-agricultural incidental M&I water use. Westlands annually sets aside a portion of its Contract agricultural supply to meet the estimated needs of the non-Ag customers, including LNAS. Westlands does not receive a separate allocation from the CVP for this purpose. CVPIA and ESA have reduced Westlands' long-term average annual Contract supply by 400,000 Acre-Feet. In addition, the quantity available to the district will vary substantially from one year to the next. As a result, Westlands Ag water users have suffered extensive reductions in Contract water supply recently.

To date, Westlands has not asked its non-Ag customers to share in the Contract supply shortages. However, given that the District's contracted CVP water supply is intended primarily for agricultural purposes, Westlands believes that its first obligation is to the agricultural water users. Therefore, as previously stated, non-Ag customers will be faced with shortages similar to those faced by agricultural water users in the future.

Under section 4.10.1 NAS Lemoore Alternative, the sub-section titled "Less than Significant Impacts," it states, "To accommodate this increased demand, NAS Lemoore will revise the existing water supply contract with the Westlands Water District to increase water delivery by an additional 150 mgy." For previously stated reasons, this is unlikely to occur. The Navy should assume that Westlands will not revise the existing contract to allow for increases in delivery. Secondly, should the Navy wish to purchase additional water supplies from Westland, the water would be supplemental water and not water already contained within the existing contract with WWD. Supplemental water supplies would be subject to availability and increased cost. It should be understood that supplemental supplies may be less than what is needed. Alternatives the Navy should consider include the following: 12-A

1. Seek a separate water supply contract with USBR.
2. Purchase supplemental water from Westlands or locate another supplier. As stated previously, this water would be subject to availability.
3. Retire lands under NAS Lemoore and transfer the water to its non-Ag uses. Such water would be subject to agricultural water deficiencies in the event of annual contract supply reductions.
4. Any combination of the above.

Westlands strongly encourages the Navy to consider an aggressive program to obtain water supplies necessary to meet their needs from other sources. Under current and possible future reductions of CVP water supply from the Federal Government, Westlands Water District may not be able to sustain the current contracted amount of 3,000 AF.

In summary, there are numerous uncertainties regarding future water supplies available to Westlands. It is therefore likely that there will be times when rationing or mandatory conservation will be applied to non-Ag M&I use within Westlands. While we do not discourage the proposed action of this DEIS, the reduced reliability of CVP water is an important consideration.

Westlands recently received a DEIS for the proposed realignment of E-2 squadrons to NAS Lemoore. We have enclosed a copy of Westlands' comments on that document.

If you have questions please call Marc Carpenter, Supervisor of Water Resources, at (209) 241-6218.

Sincerely,

Dave Orth
General Manager

Enclosures

U:\WATERRES\NAVYC-MM.WPD

Westlands Water District
3130 N. Fresno Street, P.O. Box 6056, Fresno, California 93703-6056, (209) 224-1523, FAX: (209) 241-6277

December 29, 1997

Department of the Navy
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, CA 92132-5190

Attention: Kelly K. Knight

Gentlemen:

Subject: Comments on the Draft Environmental Impact Statement for E-2 Realignment

Westlands Water District is providing the following comments for the above referenced DEIS. Westlands reviewed the Notice of Preparation for this project, and on June 6, 1996, transmitted a letter to the Navy, copy enclosed, stating in part that the District may not always be able to deliver the 3,000 AF currently contracted for between the Navy and Westlands. Westlands noted that we may have to ask our M&I customers to share in future contract water supply shortages, resulting from the Central Valley Project Improvement Act. Little has changed since the last correspondence.

These comments are directed to the water supply issues as identified in the DEIS prepared to analyze the impacts resulting from the proposed realignment of E-2 squadrons. While realignment to Lemoore Naval Air Station is not the preferred alternative stated in the DEIS, we feel compelled to comment on those sections relating to water supply issues at Lemoore Naval Air Station. In particular we reference sections 4.9.2 and the cumulative impacts section 5.2 (Water Supply Impacts page 5-15).

The third paragraph under "NAS Lemoore Alternative" titled "Water Supply" on page 4-74 states that in order to accommodate the increase in demand, NAS Lemoore would revise the existing contract with Westlands Water District to increase water delivery. Westlands is not opposed to this language. However, should the NAS Lemoore wish to purchase additional water supplies from Westlands, the water would be deemed supplemental and subject to availability and increased cost. Alternatives the Navy should consider include the following:

1. Seek a separate water supply contract with USBR.
2. Purchase supplemental water from Westlands or locate another supplier. As stated previously, this water would be subject to availability.
3. Retire Ag lands under lease at NAS Lemoore and transfer the water for a non-Ag use. Such water would be subject to agricultural water deficiencies in the event of annual contract supply reductions.

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4. Any combination of the above.

Please refer to the enclosed copy of page 3 of the Water Service Contract No. N62474-72-C-4013 between the Navy and Westlands. Section 4., paragraphs b. and d., contain water deficiency provisions. Westlands has not yet had to impose those provisions due to availability of sufficient water. However, it is likely that in the future, due to impacts by the Endangered Species Act and the CVP Improvement Act, this will no longer be the case, and non-Ag customers like NAS Lemoore will be faced with shortages. As a result, Westlands strongly encourages the Navy to consider an aggressive program to obtain water supplies necessary to meet their needs from other sources.

With regard to the section of the DEIS titled "Cumulative Impacts - Utilities and Services - Water Supply Impacts" on page 5-15, the first paragraph references Westlands as receiving water from the State Water Project. This statement is incorrect. While Westlands physically obtains water from the San Luis Canal (a joint State and Federal water conveyance facility), none of the water is deemed to be supplied by the State Water Project. Westlands has no contract to receive supplies from the State of California. Westlands has a water supply contract with United States Bureau of Reclamation (USBR) to receive water from Federally owned reservoirs.

This distinction as to the type of contract water supply Westlands receives is important in the context of the effect the Central Valley Project Improvement Act (CVPIA) is having on Federal water supplies. The actions implemented under CVPIA result in additional reductions in the amount of water that can be allocated to Federal Contractors like Westlands Water District. These actions could result in water supply reductions to M&I customers within Westlands. The District's average long term water supply from USBR is now about 65% of the full contract amount. This results in a greater dependence on supplemental water, which increases the demand for this water and has a corresponding impact on availability and cost.

In summary, there are uncertainties regarding future water supplies available to Westlands. It is therefore likely that there will be times when rationing or mandatory conservation will be applied to M&I use within Westlands. While we do not discourage the proposed action of realigning E-2 squadrons to NAS Lemoore, the reduced reliability of CVP water is an important consideration.

If you have questions please call Marc Carpenter, Supervisor of Water Resources, at (209) 241-6218.

Sincerely,

Dave Orth
General Manager

Enclosures

U:\WATERRES\141MC.97

Westlands Water District
3130 North Fresno Street, P.O. Box 6056, Fresno, California 93703-6056, (209) 224-1523, FAX: (209) 224-1560

June 6, 1996

Commanding Officer
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Coast Highway
San Diego, CA 92132-5187

Attention: Ms. Kelly Knight, Code 232.KK

Gentlemen:

Subject: Lemoore Naval Air Station Notice of Intent to Prepare An EIS for the Realignment of E-2 Aircraft Squadrons From Miramar Naval Air Station

Westlands Water District (Westlands) is providing the following comments for the above referenced Notice of Preparation. Westlands reviewed a 1994 DEIS for a proposed expansion of Lemoore Naval Air Station (LNAS), and on August 22, 1994, transmitted a letter to the Navy, copy enclosed, stating in part that the District cannot guarantee delivery to LNAS of any amount of water over the current obligation of 3,000 acre-feet (AF) per year.

Although there have been some regulatory changes since that letter was sent, little has occurred to increase the certainty of District water supplies. The Navy should, therefore, bear in mind that the District may not always be able to deliver the 3,000 AF currently contracted for between the Navy and Westlands. This uncertainty is a result of the Central Valley Project Improvement Act (CVPIA), implemented in 1993, the ever-expanding role of the Endangered Species Act (ESA) and the Bay/Delta water quality standards.

Westlands is currently reviewing its policy with regard to the allocation and delivery of non-agricultural incidental use water (non-ag). Westlands annually sets aside a portion of its Contract agricultural water supply to meet the estimated needs of the non-ag customers, including LNAS. Westlands does not receive a separate allocation from the CVP for this purpose. CVPIA and ESA have reduced Westlands' long-term average annual Contract water supply by about 35 percent. In addition, the quantity available to the District will vary substantially from one year to the next. Between 1990 and 1994, Westlands ag water users suffered extensive reductions in Contract water supply. The District was forced to purchase supplemental supplies at a delivered cost of $75 to $225 per acre-foot depending on the water year and type. The non-ag users were not impacted because Westlands continued to provide non-ag water to them at their historic water use levels, but this policy is currently under review.

255R.96/MC:m-6/6

To date, Westlands has not asked its non-ag customers to share in the Contract water supply shortages. However, given that the District's contracted CVP water supply is intended primarily for agricultural purposes, Westlands believes that its first obligation is to the agricultural water users. Therefore, if a change occurs in the current non-ag policy, that change would most likely require that non-ag water users share in the contract water supply shortages suffered by the agricultural water users.

To the extent that the activities at LNAS may require more than the 3,000 AF currently under contract, it is the preference of our Board that such increased supplies be obtained from sources other than the District's CVP agricultural water service contract. Alternatives that the Navy may consider for expanded use or to provide greater certainty for annual deliveries of the currently contracted supplies include the following:

1. Request the USBR to make special hardship allocations to the affected districts so that historical non-ag deliveries could be maintained.

2. Retire lands under LNAS control and transfer the water to its non-ag uses. Such water would be subject to agricultural water deficiencies in the event of annual contract supply reductions.

3. Seek a separate water supply contract with USBR.

4. Purchase supplemental water from Westlands or locate your own supplemental supply of water.

5. Any combination of the above to obtain the required quantity of water needed.

Please refer to the enclosed copy of page 3 of Water Service Contract No. N62474-72-C-4013 between the Navy and Westlands. Note that section 4., paragraphs b. and d., contain water deficiency provisions. Westlands has not yet had to impose those provisions due to the availability of sufficient Contract and non-Contract water during the 1995 and 1996 water year. It is likely that in the future, this will no longer be the case and non-ag customers like LNAS will be faced with shortages.

As a result, Westlands strongly encourages the Navy to consider an aggressive program to obtain water supplies sufficient to meets its current and future needs from other sources and reduce its reliance on Westlands' CVP contract supply. Please be assured, however, that we will continue to honor our contract and should be able to convey any additional supplies you may obtain from other sources. We are also available to assist in obtaining other water supplies, should you determine that is your best course of action.

If you have any questions, please call Stephen H. Ottemoeller, Director of Resources, at (209) 224-1523.

Sincerely,

David Orth
General Manager

Enclosures

cc: Roger Patterson, USBR
City of Lemoore

bcc: Marc Carpenter
Dave Ciapponi
Charlotte Dahl
Lance Johnson
Steve Ottemoeller

255R.96/MC:m-6/6

August 22, 1994

Commanding Officer
Western Division
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-2402

Attn: Mr. Surinder Sikand (Code 09F2SU)

Dear Sir:

Subject: Comments on the Draft Environmental Impact Statement (DEIS) for Naval Air Station Lemoore, Dated July 1, 1994

These comments are directed to the water supply issues as identified in the DEIS prepared to analyze impacts resulting from the proposed reallocation of facilities and operations from Naval Air Station (NAS) Mirimar to NAS Lemoore. In particular, we reference the sections entitled "Water Supply" on page 3-77 and 4-89.

The second paragraph of the "Water Supply" section on pages 3-77 states in part, "Westlands attempts to maintain the deliveries of minicipal and industrial (M&I) water at 75% levels for health and safety purposes (Ottemoeller, 1993)." Westlands has, in fact, attempted to maintain deliveries of M&I water without requiring any cutbacks or mandatory conservation. It is the U.S. Bureau of Reclamation (USBR) which has employed a "75% of historic use" policy regarding allocation of M&I supplies, regardless of specific contract language in the various M&I contracts administered by the USBR, in years when water supplies are limited. This policy resulted in up to an additional 3,000 acre-feet of supply from the USBR in 1991 and 1992.

Please note that supplies to agricultural contractors have been as low as 25 percent of contracted quantities--not the 50 percent identified in the third paragraph of the "Water Supply" section. It is also very important to note that Westlands' ability to provide M&I water service without imposing cutbacks or mandatory conservation is no longer certain and may be subject to changes in District policy in the future, depending on water supply conditions. The District is making every effort to restore and enhance its water supplies, however the District cannot absolutely guarantee that all water M&I demands can be met in the future.

The District's water supplies are variable at best as a result of the current regulatory impediments to water supply export south of the Sacramento-San Joaquin Delta. These supply reductions are a serious threat to the District's ability to meet all of its water supply demand. If, for example, the District is faced with a "zero" water supply year, the District's total water supply may be limited to the "75% of historic M&I use" as provided by the USBR, which will

severely limit the District's ability to provide sufficient water to meet normal M&I water requirements. The District has received no assurances from the USBR that the "75% of historic use" policy will remain in effect in the future. In addition, USBR documents regarding the availability of additional water in 1994 for health and safety indicate that the amount of water made available for those purposes may be less than 75% of historic use.

With regard to the analysis of impacts of the proposed action on water supply as described on page 4-89, we agree that, notwithstanding the water supply uncertainties discussed above, the proposed action will probably not have a significant effect on water supplies for the following reasons:

- The uncertainties and potential water supply deficiencies discussed above will occur with or without the proposed actions.
- The estimated level of increase in water use by NAS Lemoore would result in an increase of approximately 16 percent in total M&I deliveries in Westlands.
- If the District's projections of a long-term average supply of approximately 50 to 60 percent of contracted supply are correct, the total M&I use will be approximately 1 percent of total District supply, including the water required for the proposed action.
- The total increased usage as a result of the proposed action will be less than 1 percent of the total current Central Valley Project M&I obligations south of the Sacramento-San Joaquin Delta.

In summary, there are considerable uncertainties regarding future water supplies available to Westlands. It is, therefore, likely that there will be times when rationing or mandatory conservation will be applied to M&I use within Westlands. Although the need for such rationing or conservation is not directly related to the proposed action at NAS Lemoore, is possible that the District's review of the potential increase in M&I demand and the required contract revisions may affect the timing and frequency of the implementation of such measures.

If you have any questions, please call me at (209) 224-1523.

Sincerely,

Stephen H. Ottemoeller
Chief of Operations

301a.94/SHO:e-8/22

ANDARD FORM 30, JULY 1966 | 12ND WESTD | (OP) 4330/40 (2-72)
NERAL SERVICES ADMINISTRATION | AMEND | NT OF SOLICITATION/MODIFICA. N OF CONTRACT | PAGE 1 OF 1
PROC. REG. (41 CFR) 1-16.101

AMENDMENT/MODIFICATION NO.	2. EFFECTIVE DATE	3. REQUISITION/PURCHASE REQUEST NO.	4. PROJECT NO. (If applicable)
2474- 72-C-4013-P00008	82 Jan 01		

5. BY CODE N62474
mmanding Officer, Western Division
val Facilities Engineering Command
O. Box 727
n Bruno, California 94066

6. ADMINISTERED BY (If other than block 5) CODE
DISTRIBUTION
- [ ] ORIGINAL
- [X] DUPLICATE ORIGINAL
- [ ] CONFORMED COPY
- [ ] WFC CLEVELAND
- [X] WESTDIV 113
- [ ] XRFC SAN
- [ ] CONTRACTOR
- [ ] NAVFAC (0212)
- [ ] ACTIVITY:

7. CONTRACTOR CODE FACILITY CODE
NAME AND ADDRESS
(Street, city, county, state, and ZIP code)

Westlands Water District
P. O. Box 6056
Fresno, CA 93703

8.
- [ ] AMENDMENT OF SOLICITATION NO. _____
DATED _____ (See block 9)
- [X] MODIFICATION OF CONTRACT/ORDER NO. N62471- 72-C-401
For: Water Service
DATED 72 Dec 06 (See block 11)
At: NAS Lemoore

THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

- [ ] The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers [ ] is extended, [ ] is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods:

(a) By signing and returning _____ copies of this amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

Appropriation and Subhead	Obj. Cl.	Bureau Cont. No.	Sub Allo.	Authorization Acct'g Activity	Trans. Type	Property Acct'g Activity	Country	Cost Code	Amount
plicable funds will be cited on invoices or delivery orders issued against this contract.									

THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS

(a) [ ] This Change Order is issued pursuant to _____
The Changes set forth in block 12 are made in the above numbered contract/order.

(b) [ ] The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12.

(c) [ ] This Supplemental Agreement is entered into pursuant to authority of _____
It modifies the above numbered contract as set forth in block 12.

DESCRIPTION OF ~~AMENDMENT~~/MODIFICATION

a) Modification of the basic contract and existing modifications thereto is necessary o provide for an increase in water rates, as shown in the Rate Schedule attached to ontract N62474-72-C-4013.

1. DELETE paragraph 1 of the Rate Schedule and substitute the following in lieu hereof.

> "1. The rate for water furnished by the Contractor at the point of delivery shall be thirty-five dollars ($35.00) per acre foot. Included therein is a charge for operation, maintenance and administration of the Contractor attributable to furnishing service hereunder."

b) Estimated annual increase: $15,000

ept as provided herein, all terms and conditions of the document referenced in block 5, as heretofore changed, remain unchanged and in full force and effect.

- [ ] CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT
- [X] CONTRACTOR/~~OFFEROR~~ IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN 1 COPIES TO ISSUING OFFICE

15A. NAME OF CONTRACTOR/OFFEROR
(Signature of person authorized to sign)

16. UNITED STATES OF AMERICA
BY _____
(Signature of Contracting Officer)

GSA, DOD, NASA, AND OTHER AGENCIES	AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT	PAGE 1	OF 1

1. MODIFICATION NO.	2. EFFECTIVE DATE	3. REQUISITION/PURCHASE REQUEST NO.	4. PROJECT NO. (If applicable)
P00007	80 JAN 01		

5. ISSUED BY	CODE	6. ADMINISTERED BY (If other than block 5)	CODE
Building Officer, Western Division al Facilities Engineering Command . Box 727 Bruno, California 94066	N62474	DISTRIBUTION ☐ ORIGINAL ☒ DUPLICATE ORIGINAL ☐ CONFORMED COPY ☐ NFC CLEVELAND ☐ WESTDIV 113 ☐ NAVFAC (0212) ☐ CONTRACTOR ☐ NAVFAC (0212) ☐ ACTIVITY:	

7. CONTRACTOR NAME AND ADDRESS (No., street, city, county, state, ZIP code)	CODE	FACILITY CODE	8.
WESTLANDS WATER DISTRICT P. O. Box 5222 Fresno, CA 93755			☐ AMENDMENT OF SOLICITATION NO. _____ DATED _____ (See block 9) ☒ MODIFICATION OF CONTRACT/ORDER NO. N62474-72-C-4013 For: WATER SERVICE DATED 72 DEC 06 (See block 11) At: NAS LEMOORE

9. THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods:

By signing and returning _____ copies of this amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKOWLEDGMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

Accounting and Appropriation	Obl. Cl.	Supplem. Agmt. No.	Sub Alloc.	Authorization Acct'g Activ.	Transac. Type	Property Acct'g Activ.	Country	Cost Code	Amount
licable funds will be cited on invoices or delivery orders issued against this contract.									

10. THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS.

A. ☒ This Change Order is issued pursuant to provisions of paragraph II.3(a) of basic contract

The Changes set forth in block 12 are made to the above numbered contract/order.

B. ☐ The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12.

C. ☐ This Supplemental Agreement is entered into pursuant to authority of _____

D. It modifies the above numbered contract as set forth in block 12.

11. DESCRIPTION OF AMENDMENT/MODIFICATION

) Modification of the basic contract is necessary to provide for a decrease in water ges, as shown in the Rate Schedule attached to Contract N62474-72-C-4013.

1. DELETE paragraph 1 of the Rate Schedule and substitute the following in lieu areof.

"1. The rate for water furnished by the Contractor at the point of delivery shall be thirty dollars ($30.00) per acre foot. Included therein is a charge for operation, maintenance and administration of the Contractor attributable to furnishing service hereunder."

) Estimated annual decrease: $30,000

12. Except as provided herein, all terms and conditions of the document referenced in block 5, as heretofore changed, remain unchanged and in full force and effect.

13. ☐ CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT ☐ CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN _____ COPIES TO ISSUING OFFICE

14. NAME OF CONTRACTOR/OFFEROR	15. UNITED STATES OF AMERICA
(Signature of person authorized to sign)	BY (Signature of Contracting Officer)

10. PROC. REG. (41 CFR 1-16.101)			CIN OF CONTRACT	1
2. AMENDMENT/MODIFICATION NO. 62474-T2-C-4013-P00006	3. EFFECTIVE DATE 101 Jan 79	4. REQUISITION/PURCHASE REQUE... J.	5. PROJECT NO. (If applicable)	

6. ISSUED BY CODE N62474
Standing Officer, Western Division
Naval Facilities Engineering Command
P.O. Box 727
San Bruno, California 94066

7. ADMINISTERED BY (If other than block 6) CODE
DISTRIBUTION
☐ ORIGINAL ☒ DUPLICATE ORIGINAL ☐ CONFORMED COPY
☐ NFC CLEVELAND ☒ WESTDIV 113 ☐ NRFC SAN
☐ CONTRACTOR ☒ NAVFAC (0212) ☐ ACTIVITY:

8. CONTRACTOR NAME AND ADDRESS (Street, city, county, state, and ZIP code) CODE FACILITY CODE

WESTLANDS WATER DISTRICT
P. O. Box 5222
Fresno, California 93755

9.
☐ AMENDMENT OF SOLICITATION NO. _____
DATED _____ (See block 9)
☒ MODIFICATION OF CONTRACT/ORDER NO. N62474-T2-C-4C
For: WATER SERVICE
DATED 72 Dec 06 (See block 11)
At: NAS LEMOORE

THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods:

(a) By signing and returning _____ copies of this amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

Appropriation and Sub-head	Obj. Cl.	Business Cont. No.	Sub-Allot.	Authorization Acct'g Act'y	Transa. Type	Property Acct'g Act'y	Cost Inc.	Cost Code	Amount
Applicable funds will be cited on invoices or delivery orders issued against this contract									

THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS

(a) ☒ This Change Order is issued pursuant to: provisions of paragraph II.3(a) of basic agreement

The Changes set forth in block 12 are made in the above numbered contract/order.

☐ The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation date, etc.) set forth in block 12.

(c) ☐ This Supplemental Agreement is entered into pursuant to authority of _____

It modifies the above numbered contract as set forth in block 12.

DESCRIPTION OF AMENDMENT/MODIFICATION

(a) Modification of basic contract is necessary to provide for an increase in water rates, as shown in the Rate Schedule attached to Contract N62474-T2-C-4013.

1. DELETE paragraph 1 of the Rate Schedule and substitute the following in lieu thereof:

"1. The rate for water furnished by the Contractor at the point of delivery shall be forty dollars ($40.00) per acre foot. Included therein is a charge for operation, maintenance and administration of the Contractor attributable to furnishing service hereunder."

(b) Estimated annual increase: $28,500.00

Except as provided herein, all terms and conditions of the document referenced in block 1, as heretofore changed, remain unchanged and in full force and effect.

15. ☐ CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT ☐ CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN _____ COPIES TO ISSUING OFFICE

16. NAME OF CONTRACTOR/OFFEROR

(Signature of person authorized to sign)

17. UNITED STATES OF AMERICA
BY _____
(Signature of Contracting Officer)

18. NAME AND TITLE OF SIGNER (Type or print) 19. DATE SIGNED 20. NAME OF CONTRACTING OFFICER

Attachment to ... made a part of
Contract No. 7-07-20-W0013

RESOLUTION NO. G22-79

WESTLANDS WATER DISTRICT

WHEREAS, it is necessary to establish water and power surcharge rates for this District for 1980.

NOW, THEREFORE, BE IT, AND IT IS HEREBY, RESOLVED that, unless otherwise provided by this Board of Directors, the rates for water service for the calendar year 1980 shall be as follows:

(a) Agricultural water service:

Original Westlands area of the District $11.40

Original Westplains area of the District $14.00

The rate for the original Westplains area shall be subject to adjustment by the Board of Directors prior to January 1, 1980, if necessary, to reflect the actual 1980 water entitlement for that area.

(b) Agricultural water service pursuant to Resolution No. 327-70 for lands west of the San Luis Canal for water users who have provided the temporary diversion facilities necessary for such service: The applicable water rate per acre-foot plus a power surcharge based upon the following schedule:

COMPUTED HEAD	1980 SURCHARGE	COMPUTED HEAD	1980 SURCHARGE
0 to 49	$ 0.75	540 to 559	$ 8.05
50 to 99	1.10	560 to 579	8.35
100 to 119	1.60	580 to 599	8.65
120 to 139	1.90	600 to 619	8.95
140 to 159	2.20	620 to 639	9.20
160 to 179	2.50	640 to 659	9.50
180 to 199	2.80	660 to 679	9.80
200 to 219	3.05	680 to 699	10.10
220 to 239	3.35	700 to 719	10.40
240 to 259	3.65	720 to 739	10.70
260 to 279	3.95	740 to 759	11.00
280 to 299	4.25	760 to 779	11.25
300 to 319	4.55	780 to 799	11.55
320 to 339	4.85	800 to 819	11.85
340 to 359	5.10	820 to 839	12.15
360 to 379	5.40	840 to 859	12.45
380 to 399	5.70	860 to 879	12.75
400 to 419	6.00	880 to 899	13.05
420 to 439	6.30	900 to 919	13.30
440 to 459	6.60	920 to 939	13.60
460 to 479	6.90	940 to 959	13.90
480 to 499	7.15	960 to 979	14.20
500 to 519	7.45	980 to 999	14.50
520 to 539	7.75		

For computed heads greater than 999 feet the surcharge shall be $14.50 plus $0.053 for each foot of computed head above 999 feet.

NDARD FORM 30, JULY 1960 | WESTERN DIVISION (OP) 4330/40 (2-72)
ERAL SERVICES ADMINISTRATION PROC. REG. (41 CFR) 1-16.101

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

PAGE 1 OF 1

1. AMENDMENT/MODIFICATION NO.	2. EFFECTIVE DATE	3. REQUISITION/PURCHASE REQUEST NO.	4. PROJECT NO. (If applicable)
4- 72-C-4013-P00005	78 SEP 10		

5. ISSUED BY CODE N62474
Commanding Officer, Western Division
Naval Facilities Engineering Command
P. O. Box 727
San Bruno, California 94066

6. ADMINISTERED BY (If other than block 5) CODE
DISTRIBUTION
- [ ] ORIGINAL
- [ ] DUPLICATE ORIGINAL
- [ ] CONFORMED COPY
- [ ] WFC CLEVELAND
- [ ] WESTDIV 113
- [ ] NRFC SAN
- [ ] CONTRACTOR
- [ ] NAVFAC (0212)
- [ ] ACTIVITY:

7. CONTRACTOR NAME AND ADDRESS CODE FACILITY CODE

WESTLANDS WATER DISTRICT
P. O. Box 5222
Fresno, CA 93755

8.
- [ ] AMENDMENT OF SOLICITATION NO. _____
DATED _____ (See block 9)
- [X] MODIFICATION OF CONTRACT/ORDER NO. N62474- 72-C-4013
For: WATER SERVICE
DATED 72 DEC 06 (See block 11)
At: NAS LEMOORE

THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

[ ] The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers [ ] is extended, [ ] is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods:

(a) By signing and returning _____ copies of this amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKOWLEDGMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

Appropriation and Subhead	Obj. Cl.	Supplem. Cont. No.	Sub Allot.	Authorization Acct'g Activ.	Trans. Type	Property Acct'g Activ.	Count.	Cost Code	Amount
plicable funds will be cited on invoices or delivery orders issued against this contract.									

THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS.

(a) [X] This Change Order is issued pursuant to ~~paragraph 11(a) of the basic contract~~

The Changes set forth in block 12 are made to the above numbered contract/order.

(b) [ ] The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation date, etc.) set forth in block 12.

(c) [ ] This Supplemental Agreement is entered into pursuant to authority of _____

It modifies the above numbered contract as set forth in block 12.

DESCRIPTION OF ~~AMENDMENT~~/MODIFICATION

) Modification of the basic contract is necessary to incorporate the actual cost of the nnection charge pursuant to paragraph 11(a) of the basic contract and to authorize payment:

THEREFORE, add the following new paragraph to the basic contract:

"In consideration of the Contractor's furnishing at its expense, the facilities required to provide service, the Government shall pay the Contractor, as a connection charge, the actual cost of the facilities, the actual cost of which is $1,139,036.78, of which the Government has previously paid $900,000.00 and the balance of which, $239,036.78, is remaining and due, payment of which is hereby authorized".

) Appropriation Chargeable for balance of connection charge: AB17X1205.2521 032 12212 0 062474 2A 000000 N63042820C72 ($239,036.78)

Except as provided herein, all terms and conditions of the document referenced in block 1, as heretofore changed, remain unchanged and in full force and effect.

[ ] CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT [X] CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN 3/SIGNED TO ISSUING OFFICE

15A. NAME OF CONTRACTOR/OFFEROR	16. UNITED STATES OF AMERICA
WESTLANDS WATER DISTRICT	BY
Manager	(Signature of Contracting Officer)
(Signature of person authorized to sign)	

...ACT/MODIFICATION NO. 474- 72-C-4013-P00004	EFFECTIVE DATE 17 JAN 01	3. REQUISITION/PURCHASE REQUEST	4. PROJECT NO. (If applicable)

5. ISSUED BY CODE N62474
Contracting Officer, Western Division
Naval Facilities Engineering Command
P. O. Box 727
San Bruno, California 94066

6. ADMINISTERED BY (If other than block 5) CODE

DISTRIBUTION
- [ ] ORIGINAL
- [ ] DFC CLEVELAND
- [ ] CONTRACTOR
- [X] DUPLICATE ORIGINAL
- [ ] WESTDIV 113
- [ ] NAVFAC (0212)
- [ ] CONFORMED COPY
- [ ] NAVFAC SAR
- [ ] ACTIVITY:

7. CONTRACTOR NAME AND ADDRESS (No., street, city, county, state, ZIP) CODE FACILITY CODE

WESTLANDS WATER DISTRICT
P. O. Box 5222
Fresno, CA 93755

8.
- [ ] AMENDMENT OF SOLICITATION NO. _____
- DATED _____ (See block 9)
- [X] MODIFICATION OF CONTRACT/ORDER NO. N62474- 72-C-4
- For: WATER SERVICE
- DATED 72 DEC 06 (See block 11)
- At: NAS LEMOORE

THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

[ ] The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers [ ] is extended, [ ] is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods: (a) By signing and returning _____ copies of this amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

Appropriation and Subhead	Obj. Cl.	Statutory Cont. No.	Sub-Allot.	Authorization Acct'g Activity	Transaction Type	Property Acct'g Activity	Cancelled	Cost Code	Amount
Applicable funds will be cited on invoices or delivery orders issued against this contract									

THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS

a) [X] This Change Order is issued pursuant to provisions of paragraph 5 of the basic contract

The Changes set forth in block 12 are made to the above numbered contract/order.

[ ] The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12.

c) [ ] This Supplemental Agreement is entered into pursuant to authority of _____

It modifies the above numbered contract as set forth in block 12.

DESCRIPTION OF AMENDMENT/MODIFICATION

.) A limited one-year modification of the basic contract is mutually desired so as to provide for a temporary reduction in the volume of domestic water required of the Contr for Naval Air Station, Lemoore only for the period of 01 January 1977 through 31 Dec ber 1977.

WHEREAS, it is recognized that water from the Westlands Water District is currently short supply due to recent drought conditions; and

WHEREAS, the Naval Air Station, Lemoore has water wells which are presently capable supplying a part of the domestic nonagricultural water requirement of the Naval Air Station, Lemoore; and

WHEREAS, the Naval Air Station, Lemoore is willing, on a temporary one-year basis, t produce water from its own wells for its own use and thereby make a portion of its water entitlement from Westlands Water District, during that one-year period, availa to other customers of the Westlands Water District.

(CONT'D ON PAGE 2 OF 2)

Except as provided herein, all terms and conditions of the document referenced in block 8, as heretofore changed, remain unchanged and in full force and effect.

[ ] CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT [X] CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN 3/SIGNED COPIES TO ISSUING OFFICE

15A. NAME OF CONTRACTOR/OFFEROR	16A. UNITED STATES OF AMERICA
WESTLANDS WATER DISTRICT	
William K. Schmutz	BY _____
(Signature of person authorized to sign)	(Signature of Contracting Officer)

NOW, THEREFORE, IT IS AGREED THAT:

1. The Contractor shall not be obligated in the period 01 January 1977 through 31 December 1977 to furnish the Government a total of more than One Thousand Five Hundred (1,500) acre-feet of water for domestic nonagricultural purposes pursuant to this contract;

2. In the event that 1,500 acre-feet of water is delivered to the Government during the period 01 January 1977 through 31 December 1977, the minimum annual payment obligation shall be deemed to have been satisfied;

3. During the period 01 January 1977 through 31 December 1977 water delivered by the Contractor to the Government shall be billed at the following rates:

First 1,500 acre-feet	- $26.66 per acre-foot
~~All over 1,500 acre-feet~~	~~- $30.00 per acre-foot~~

4. If at any time during the period 01 January 1977 ~~through~~ 31 December 1977 it becomes necessary for the Government to discontinue its water pumping operations for reasons ~~within~~ its own discretion, deemed necessary by the Government, ~~the~~ Contractor within 30 days of a receipt of written notice ~~therefore~~, shall immediately make available to the Government ~~the~~ regular annual quantity of 3,000 acre-feet of water at original ~~rate of $30.00 per acre-foot~~.

ERAL SERVICES ADMINISTRATION PROC. REG. (41 CFR) 1-16.101	AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT	1 2

AMENDMENT/MODIFICATION NO.	EFFECTIVE DATE	REQUISITION/PURCHASE REQUEST NO.	PROJECT NO. (If applicable)
P474-72-C-4013-P00003	75 JAN 01		

BY	CODE	ADMINISTERED BY (If other than block 5)	CODE
ding Officer, Western Division al Facilities Engineering Command . Box 727 Bruno, California 94066	N62474	DISTRIBUTION ☐ ORIGINAL ☒ DUPLICATE ORIGINAL ☐ CONFORMED COPY ☐ NFC CLEVELAND ☐ WESTDIV 113 ☐ NRFC SAN ☐ CONTRACTOR ☐ NAVFAC (0212) ☐ ACTIVITY:	

CONTRACTOR NAME AND ADDRESS	CODE	FACILITY CODE	8.
Westlands Water District P.O. Box 5222 Fresno, CA 93755			☐ AMENDMENT OF SOLICITATION NO. _____ DATED _____ (See block 9) ☒ MODIFICATION OF CONTRACT/ORDER NO. N62474-72-C-401 For: Water Service DATED 72 DEC 06 (See block 11) AT: NAS Lemoore

IS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

] The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.

fferor must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods:

By signing and returning _____ copies of this amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKOWLEDGMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

Accounting and Appropriation Data	Obl. Co.	Business Char. Nbr.	Sub Allot.	Authentication Acct'g. Activity	Trans. Type	Property Acct'g. Activity	Cancelled	Case Code	Amount
licable funds will be cited on invoices or delivery orders issued against this contract									

IS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS

) ☒ This Change Order is issued pursuant to provisions of Paragraph 5 of the basic agreement.

The Changes set forth in block 12 are made to the above numbered contract/order.

) ☐ The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12.

) ☐ This Supplemental Agreement is entered into pursuant to authority of _____

is modifies the above numbered contract as set forth in block 12.

SCRIPTION OF AMENDMENT/MODIFICATION

a) Modification of the basic contract is necessary to provide for a change in the volume of water required and to incorporate other changes related to water service as shown in the Water Service Specifications and the Rate Schedule attached to Contract N62474-72-C-4013.

1. Delete the first sentence of Paragraph 2 of the Water Service Specifications and substitute the following in lieu thereof:

"Contractor shall not be obligated in any year to furnish the Government a total of more than Three Thousand (3,000) acre-feet of water for non-agricultural purposes pursuant to this contract."

2. In paragraph 3 of the Water Service Specifications delete the word "proposed".

3. In paragraph 2.a. of the Rate Schedule change "4,000 acre-feet" to read "3,000 acre-feet".

4. In paragraph 2.b. of the Rate Schedule change "333.33 acre feet" to read "at leas 250-acre-feet" and change "4,000 acre-feet" to read "3,000 acre-feet".

t as provided herein, all terms and conditions of the document referenced in block 8, as heretofore changed, remain unchanged and in full force and effect.

☐ CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT ☐ CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN Orig & Two COPIES TO ISSUING OFFICE

NAME OF CONTRACTOR/OFFEROR	17. UNITED STATES OF AMERICA
Ralph M. Brody	BY _____
(Signature of person authorized to sign)	(Signature of Contracting Officer)

RESOLUTION NO. 479-75

WESTLANDS WATER DISTRICT

WHEREAS, this Board of Directors has heretofore approved and the District has entered into Contract No. N62474-72-C-4013 with the United States Department of the Navy for the providing of non-agricultural water service to the Naval Air Station, Lemoore, California, and for the advance payment for the facilities required to provide such service; and

WHEREAS, Navy has requested modification of the contract to decrease the amount of water which the District is obligated to furnish and the minimum annual payment required by Navy under the contract, both as reflected in the attached form of Modification of Contract (No. N62474-72-C-4013-P00003) to be effective as of January 1, 1975; and

WHEREAS, said Modification is satisfactory to the District; and

WHEREAS, the Navy made the minimum monthly payment provided for in the contract for January and February, 1974, even though service to the Station had not commenced during said months and it is, therefore, entitled to a credit in the amount of $20,129.70 for said period.

NOW, THEREFORE, BE IT, AND IT HEREBY, RESOLVED that this Board of Directors do, and it does hereby, approve and authorize the execution by the Manager-Chief Counsel of the District on behalf of Westlands Water District of the attached form of Modification of Contract (No. N62474-72-C-4013-P00003).

BE IT FURTHER RESOLVED that the Manager-Chief Counsel or his designee is authorized and directed to credit Navy's account in the amount of $20,129.70 for the minimum payment made by it prior to the time service to the Station was commenced.

AYES: Directors Carr, Anderson, Deal, Diener, Patterson, Smith and Stone

NOES: None

ABSENT: Directors Allen and O'Neill

(c) Non-agricultural water service: $30.00 per acre-foot with a minimum charge of $60.00 payable in advance of service.

BE IT FURTHER RESOLVED that the Manager is authorized to increase or decrease said power surcharge rates during 1980 to reflect increases or decreases in Pacific Gas and Electric Company rates that occur after the adoption of this resolution. Such changes shall be effective on the effective date of the P. G. & E. rate change. The following formula shall be used in computing the increase or decrease in the surcharge rates:

Basis of new surcharge = $\frac{x - y}{z}$ dollars per KWH used,

where x = The total number of dollars required for the year, considering the changed power rates.

y = The total number of dollars collected under old surcharge rates.

z = The estimated number of kilowatt-hours yet to be used by District-owned temporary pumps during 1980.

AYES: Directors Stone, Allen, Diener, Indart, Smith, Ulrici & Woolf

NOES: Directors O'Neill and Patterson

ABSENT: None

ADOPTED: November 19, 1979

STATE OF CALIFORNIA)
) ss
COUNTY OF FRESNO)

I, Verna Perry, do hereby certify that I am the duly appointed, qualified and acting Secretary of Westlands Water District, a public district organized under the laws of the State of California with its offices at Fresno, California; that the foregoing Resolution No. 479-75 was duly and regularly adopted by the Board of Directors of Westlands Water District at a meeting of said Board of Directors duly called and held on the 11th day of August, 1975 at the offices of said Westlands Water District at which a quorum of said Directors was present and acting; and that said Resolution is still in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and seal as Secretary of said District this 26th day of August, 19 75.

Verna Perry
Secretary
Westlands Water District

(SEAL)

5. Delete paragraphs 2.c. and 2.d. of the Rate Schedule and substitute the following in lieu thereof:

"c. In the event that 3,000 acre-feet of water is delivered to the Government prior to the end of the calendar year, the minimum annual payment obligation shall be deemed to have been satisfied. During the remainder of the year, any additional water furnished by the Contractor shall be paid for at the rate specified in paragraph (1) or as otherwise established in accordance with the Technical and General Provisions for Utility Service.

d. If, in any year, the Contractor is unable to supply the quantity of water for which the Government would otherwise be required to pay, the minimum annual payment obligation shall be reduced by the number of acre-feet, as determined by the Contractor, which the Government would normally have used during the period(s) of interrupted service, if any, during the year. Any amount of overpayment shall, at the option of Government, be refunded to the Government or credited on amounts to become due to the District in the ensuing year. Such adjustment, which shall be made during January of the ensuing year, shall constitute the sole remedy of the Government or any one having or claiming to have the right to the use of any of the water supply provided for herein."

(b) Except as provided herein, all terms and conditions of the document referenced in block 8, as heretofore changed, remain unchanged and in full force and effect.

STANDARD FORM 30 (REV. 10-83) — Prescribed by GSA — FAR (48 CFR) 53.243 (10-83)

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQUEST NO.	5. PROJECT NO. (If applicable)
52474-72-C-4013-P00002	74 JAN 01		

6. ISSUED BY	CODE	7. ADMINISTERED BY (If other than item 6)	CODE
Commanding Officer, Western Division Naval Facilities Engineering Command P.O. Box 727 San Bruno, California 94066	N62474	DISTRIBUTION: ☐ ORIGINAL ☐ DFC CLEVELAND ☐ CONTRACTOR ☒ DUPLICATE ORIGINAL ☐ DESIGN ITR ☐ NAVFAC (0212) ☐ CONFORMED COPY ☐ RFC SAN ☐ ACTIVITY	

8. NAME AND ADDRESS OF CONTRACTOR (No., street, city, county, state and ZIP code)	CODE	FACILITY CODE
WESTLANDS WATER DISTRICT P. O. Box 5222 Fresno, California 93755		

9. ☐ AMENDMENT OF SOLICITATION NO. _____

DATED _____ (See block 9)

10. ☒ MODIFICATION OF CONTRACT/ORDER NO. N62474-72-C-4013

For: Water service

DATED 72 DEC 01 (See block 11)

Att: WM Bellore

THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods: (a) By signing and returning _____ copies of this amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

Accounting and Appropriation	Obl. Cl.	Budget Cont. No.	Sub Allot.	Authorization Agent's Acct'g	Trans. Type	Property Acct'g Activity	Cost Acct. No.	Job Code	Amount
Applicable funds will be cited on invoices or delivery orders issued against this contract.									

THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS

(a) ☒ This Change Order is issued pursuant to: provisions of paragraph II.3(a) of basic agreement

The Changes set forth in block 12 are made in the above numbered contract/order.

(b) ☐ The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12.

(c) ☐ This Supplemental Agreement is entered into pursuant to authority of: _____

It modifies the above numbered contract as set forth in block 12.

DESCRIPTION OF AMENDMENT/MODIFICATION

(a) Modification of basic contract is necessary to provide for an increase in water rates, as shown in the Rate Schedule attached to Contract N62474-72-C-4013.

1. DELETE paragraph 1 of the Rate Schedule and substitute the following in lieu thereof:

"1. The rate for water furnished by the Contractor at the point of delivery shall be thirty dollars and fifty cents ($30.50) per acre foot. Included therein is a charge for operation, maintenance and administration of the Contractor attributable to furnishing service hereunder."

(b) Estimated annual increase: $2,000

Except as provided herein, all terms and conditions of the document referenced in block 9, as heretofore changed, remain unchanged and in full force and effect.

☒ CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT ☐ CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN _____ COPIES TO ISSUING OFFICE

15A. NAME OF CONTRACTOR/OFFEROR	15B. UNITED STATES OF AMERICA
	BY: C. M. Dahlen

Hf:lp

Attached to and made a part of
Contract No. N62474-72-C-4013

WATER SERVICE SPECIFICATIONS

1. PREMISES TO BE SERVED: Naval Air Station
Lemoore, California

2. SERVICE OBLIGATION: Contractor shall not be obligated in any year to furnish the Government a total of more than Four Thousand (4,000) acre-feet of water for non-agricultural purposes pursuant to this contract. Each year, prior to December 1, the Government shall furnish to the Contractor an estimate of the quantity of service, by months, which will be required during the next succeeding calendar year.

3. POINT OF DELIVERY: The proposed Naval Air Station Water Treatment Plant in the NE 1/4 of Section 21, T.19S., R.19E., M.D.B.&M. in Kings County, California.

4. METERING: Water shall be measured by one 24-inch meter on one 36-inch service line.

5. DESCRIPTION OF WATER SERVICE: The facilities provided by the Contractor for water service at the point of delivery shall be so designed and constructed as to permit a minimum delivery water surface elevation of 240.0, approximately 15 feet above the ground surface: Provided, that Government shall not connect pumps directly to the Contractor's facilities. Contractor's Laterals 29, 29-1.0, 30 and 30-1.3 shall be designed and constructed with adequate capacity to permit a rate of flow of 20 cfs. Prior to the completion of Lateral 29-1.0 and upon completion of Lateral 30-1.3, Contractor will provide service from Lateral 30-1.3 at a rate up to 15 cfs, 12 cfs of which shall be on a standby basis from the Government's allocation of agricultural capacity in Lateral 30-1.3.

6. QUALITY OF WATER: Quality of water supplied by Contractor shall be in accordance with the providions of paragraph II.6 WATER QUALITY, of the TECHNICAL AND GENERAL PROVISIONS FOR UTILITY SERVICE, of this Contract.

HM:lp

Attached to and made a part of
Contract No. N62474-72-C-4013

RATE SCHEDULE

1. The rate for water furnished by the Contractor at the point of delivery shall be thirty dollars ($30) per acre foot. Included therein is a charge for operation, maintenance and administration of the Contractor attributable to furnishing service hereunder.

2. a. The minimum amount of water to be purchased by the Government shall be 4000 acre feet during each calendar year.

b. Government shall pay for 333.33 acre-feet of water each month; provided, that the purchase of water each month and the payment therefor shall be credited cumulatively against the annual minimum obligation until an amount of 4000 acre-feet has been delivered by Contractor to Government.

c. In the event that 4000 acre feet of water is delivered to the Government prior to the end of the calendar year, the minimum annual amount shall be deemed to have been satisfied, and the minimum monthly payments shall not be payable for the remainder of the twelve month period.

d. If the quanitity of water actually available for the Government during any year, as determined by the Contractor, is less than the quantity for which the Government is required to pay, the Government shall pay only for the amount of water actually available. Such adjustment shall constitute the sole remedy of the Government or any one having or claiming to have the right to the use of any of the water supply provided for herein.

HM:kb

Contract No. N62474-72-C-4013

DEPARTMENT OF THE NAVY

NEGOTIATED WATER SERVICE CONTRACT

Naval Air Station	Lemoore		California
(Premises to be served)	(City)	(County)	(State)

Westlands Water District 567 West Shaw, Fresno, California
(Contractor) (Contractor's Address)

Premises are: (X) Government Owned
( ) Government Leased
Symbol No. of Lease:
Name of Lessor:

Estimated annual cost hereunder: $120,000

Connection Charge: $900,000

Bills will be rendered in quintuplicate to: Commanding Officer
Naval Air Station
Lemoore, California 93245

Payments will be made by: Commanding Officer
Navy Regional Finance Center
Treasure Island, San Francisco, California 94130

Communications: All communications and modifications regarding this contract shall be addressed as follows:

Contractor: Westlands Water District
P.O. Box 5222
Fresno, California 93755

Government: Commanding Officer, Western Division
Naval Facilities Engineering Command (Code 113).
P.O. Box 727
San Bruno, California 94066

This contract is negotiated pursuant to the authority of 10 USC 2304(a) (10)

Appropriations chargeable:
For Recurring Billing Charges: Applicable funds will be cited on invoices or delivery orders issued against this contract.
For Connection Charge: 17X1205.2521 025 12212 0 062474 2A 000000
N6304282ØC72

☐ NFC Cleveland ☐ [illegible] 113 ☐ NAFC San
☐ CONTRACTOR ☐ NAVFAC (0212) ☐ ACTIVITY:

DUPLICATE ORIGINAL

HM:kb

Contract No. N62474-72-C-4013

THIS CONTRACT is entered into as of DEC 06 1972 by and between the UNITED STATES OF AMERICA, Department of the Navy, hereinafter called the Government, represented by the Contracting Officer executing this contract, and WESTLANDS WATER DISTRICT, whose address is 567 West Shaw, Fresno, California 93705, hereinafter called the Contractor, said Contractor being a political subdivision of the State of California, duly organized and operating pursuant to the laws thereof.

I. SCOPE. Subject to the terms and conditions hereinafter set forth and also subject to the Contractor's water service Contract No. 14-06-200-495-A dated 5 June 1963 with the United States of America, Department of Interior, hereinafter called Interior, and its distribution system construction Contract No. 14-06-20-2020-A dated 1 April 1965 with Interior as the same now or hereafter may be amended and, except as otherwise provided herein, subject to the terms or conditions as may now or hereafter be generally imposed by the Contractor in connection with non-agricultural water service, the Contractor shall furnish, and the Government shall purchase and receive non-agricultural water service (hereinafter called service) requested by the Government from the Contractor at the premises to be served hereunder (hereinafter called the service location), in accordance with the General and Technical Provisions and the Water Service Specifications attached hereto and made a part hereof.

II. TERM. This contract shall continue in effect until terminated at the option of either party by the giving of written notice not less than thirty (30) days in advance of the effective date of termination.

IN WITNESS WHEREOF, the parties hereto have executed this contract as of the day and year first above written.

WESTLANDS WATER DISTRICT

BY _____
Vice President

BY _____
Secretary

THE UNITED STATES OF AMERICA

BY _____
R. A. [illegible], Captain, CEC, USN
for Commander, Naval Facilities Engineering Command, Contracting Officer

HM:kb
WWD-W 4/72

Attached to and made a part of
Contract No. N62474-72-C-4013

TECHNICAL AND GENERAL PROVISIONS FOR UTILITY SERVICE

I. TECHNICAL PROVISIONS

1. MEASUREMENT OF SERVICE

(a) All service furnished by the Contractor shall be measured by metering equipment of standard manufacture, furnished, installed, maintained, calibrated by the Government at its expense, and read by the Contractor. In the event that any meter fails to register or registers incorrectly, the quantity of service delivered through it during that period shall be determined, and an equitable adjustment based thereon shall be made in the Government's bills (for this purpose any meter which registers not more than two (2) percent slow or fast shall be deemed correct). Failure to agree on any adjustment shall be a dispute concerning a question of fact within the meaning of the "Disputes" clause of this contract.

(b) The Contractor shall read all meters at periodic intervals of approximately thirty (30) days. All billings based on meter readings of less than twenty-seven (27) days or more than thirty-three (33) days shall be prorated accordingly.

2. METER TEST. At the written request of the Contractor, the Contractor shall have the right to make tests of any or all of such meters in the presence of Government representatives. The cost of such tests shall be borne by the Government if the percentage of error is found to be more than two (2) per cent slow or fast. No meter shall be placed in service or allowed to remain in service which has an error in registration in excess of two (2) per cent under normal operating conditions.

II. GENERAL PROVISIONS

1. PAYMENT

(a) The Contractor shall be paid by the designated disbursing officer for service furnished hereunder at the rates specified; provided, that the Government shall be liable for the minimum monthly charge specified in this contract commencing with the billing period in which service is initially furnished and continuing until this contract is terminated, except that the minimum monthly charge shall be equitably prorated for the billing period in which commencement and termination of this contract shall become effective.

(b) Payments hereunder shall be contingent upon the availability of appropriations therefor, and shall not be made in advance of the service rendered.

TECHNICAL AND GENERAL PROVISIONS FOR UTILITY SERVICE (Cont'd)

(c) All bills for service shall be paid without penalty or interest and the Government shall be entitled to any discounts customarily applicable to payment of bills by all customers of the Contractor.

(d) Invoices for service rendered hereunder shall contain the number of the contract, statements of the meter readings at the beginning of the billing period, meter constants, and consumption during the billing period.

(e) The Contractor hereby declares that rates are not in excess of the lowest rates now available to any existing or prospective non-agriculatural water user subject to similar rate classification, and agrees that during the life of this contract the Government shall continue to be billed at the lowest applicable rate for such classification.

2. RATES AND CHARGES

(a) For all service furnish under this contract to the service location the Government shall pay the Contractor at the rates specified in the rate schedule attached hereto and made a part hereof.

3. CHANGE OF RATES

(a) The Contractor may, as provided by law, establish rates each year for service to be provided hereunder. If the Contractor adopts a rate schedule, other than that incorporated herein, which results in higher or lower charges for service to any customer subject to similar rate classification, the Contractor shall continue to furnish service as provided herein and the Government shall pay for such service at the higher or lower rates from the effective date thereof. Such rate changes shall not be made more often than once every calendar year.

TECHNICAL AND GENERAL PROVISIONS FOR UTILITY SERVICE (Cont'd)

4. COMMENCEMENT AND CONTINUITY OF SERVICE

(a) Contractor shall not be obligated to commence or continue service hereunder unless and until the facilities necessary therefor have been constructed by the United States, acting by and through the Secretary of the Interior, as represented by the Bureau of Reclamation, and have been made available for use by the Contractor.

(b) Subject to the terms hereof and the availability of water and the limitation of capacity in the facilities then in existence and necessary for serving the Government, all as determined by the Contractor, the Contractor shall use reasonable diligence to provide a regular and uninterrupted supply of water at the point of delivery, but shall not be liable to the Government for damages for breach of contract or otherwise, for failure, suspension diminution, or other variations of service occasioned by any cause beyond the control and without the fault or negligence of the Contractor. Such causes may include, but are not restricted to, water shortages, acts of God or of the public enemy, acts of the Government in either its soverign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, or failure or breakdown of transmission or other facilities.

(c) The Contractor, whenever it shall find it necessary for the purpose of maintenance, repairs or improvements to its system, may temporarily suspend service hereunder. The Contractor shall not be liable for failure of, or reasonable interruptions, or delays in service resulting from causes beyond the control of the Contractor.

(d) Nothing contained herein shall be construed as giving Government any priority with respect to the water supply available for distribution by the Contractor. Should a shortage occur in the available supply of water or should there be a failure of the Contractor's facilities, the Contractor may curtail or halt deliveries of water to Government. In the event of a water shortage and the need for the Contractor to apportion the water available for non-agricultural use, Government shall share in the apportionment of water for non-agricultural use as nearly as may be practicable in the same manner as other non-agricultural water users.

5. CHANGE IN VOLUME OR CHARACTER OF SERVICE. The Contracting Officer shall give such notice as the Contractor might reasonably require respecting the time and volume at which the Government wishes to commence service; and any material changes anticipated in the volume or characteristics of the service equipment.

TECHNICAL AND GENERAL PROVISIONS FOR UTILITY SERVICE (Cont'd)

6. WATER QUALITY. The Contractor does not warrant the quality or potability of the water to be made available. The Government shall be responsible for any water treatment which is required to make the water usable for the purposes to which it is to be put, or which is required by Federal, state or local law or regulation. The Government agrees to hold the Contractor harmless from any and all damages arising out of the use of such water by the Government or its permittees insofar as it may do so as determined in accordance with the applicable provisions of the Federal Tort Claims Act (62 Stat. 869, 982; 28 U.S.C. 2671-2680).

7. CONTRACTOR'S FACILITIES.

(a) The Contractor, at its expense, shall furnish, install, operate and maintain all facilities required to furnish service hereunder to, and to measure service at the point of delivery specified herein, from facilities available to the Contractor provided, that the Government shall furnish, install, operate and maintain at its expense, metering equipment as specified in paragraph I.1. (a) hereinbefore. Title to all of the facilities provided by the Contractor shall remain in the Department of Interior until otherwise provided by Congress. The Contractor shall be responsible for all loss of or damage to those facilities provided by the Contractor except that arising out of the fault or negligence of the Government, its agents or its employees. All taxes and other charges in connection therewith, together with all liability arising out of the negligence of the Contractor in the construction, operation, or maintenance of the facilities provided by the Contractor, shall be assumed by the Contractor; provided that an appropriate share of any cost to the Contractor arising out of such loss or damage may be charged as a part of the operation and maintenance costs to be paid by the Government in the same manner as such charges are imposed on other water users within the Contractor's service area.

(b) The Government hereby grants to the Contractor, or its assigns, free of any rental or similar charge, but subject to the limitations specified in this contract, a revocable permit to enter the service locations for any proper purpose under this contract, including use of the site or sites agreed upon by the parties hereto for the installation, operation, and maintenance of the facilities of the Contractor required to be located upon Government premises. Authorized representatives of the Contractor will be allowed access to the facilities of the Contractor at suitable times to perform the obligations of the Contractor with respect to these facilities. It is expressly understood that the Government may limit or restrict the right of access herein granted in any manner considered to be necessary for the national security.

TECHNICAL AND GENERAL PROVISIONS FOR UTILITY SERVICE (Cont'd)

(c) The facilities at a depth of three feet or less from ground surface shall be removed and Government premises restored to their original condition, ordinary wear and tear excepted, by the Contractor at its expense within a reasonable time after the Government shall revoke the permit hereingranted and in any event within a reasonable time after termination of this contract, provided, that in the event of termination due to fault of the Contractor these facilities may be retained in place at the option of the Government until service comparable to that provided for hereunder is obtained elsewhere.

(d) At the request of the Contractor, Government shall secure from its lessees and furnish to the Contractor or his assignee, the right or privilege to construct reconstruct, operate, maintain, and remove Contractor-owned water pipelines with all fixtures, devices and appurtenances used or useful in operation of said pipelines across areas designated for use by the Contractor.

8. RESPONSIBILITY FOR DISTRIBUTION OF WATER. The Contractor shall not be responsible for the control, carriage, handling, use, disposal or distribution of water which may be furnished to the Government hereunder beyond the point of delivery and the Government shall hold the Contractor harmless on account of damage or claim of damage, personal injury or death, arising out of or connected with the control, carriage, handling, use, disposal or distribution of such water beyond the point of delivery insofar as the Government may do so in accordance with the applicable provisions of the Federal Tort Claims Act (62 Stat. 869, 982; 28 U.S.C. 2671-2680).

9. CONFLICTS. To the extent of any inconsistency between the provisions of this contract, and the provisions of any schedule, rider, or exhibit incorporated in this contract by reference or otherwise, the provisions of the contract shall control.

TECHNICAL AND GENERAL PROVISIONS FOR UTILITY SERVICE (Cont'd)

10. OTHER STANDARD PROVISIONS

(a) The following clauses of the Armed Services Procurement Regulation are hereby incorporated by reference and made a part of this contract in accordance with Section VII, paragraph 7-001, of ASPR dated 31 March 1969, Rev. 1:

Clause Number	Clause Title	Clause Date
7-103.1	DEFINITIONS	FEB 1962
7-103.8	ASSIGNMENT OF CLAIMS	FEB 1962
7-103.12(a)	DISPUTES	JAN 1958
7-103.19	OFFICIALS NOT TO BENEFIT	JUL 1949
7-103.20	COVENANT AGAINST CONTINGENT FEES	JAN 1958
7-104.15	EXAMINATION OF RECORDS	MAR 1971
7-104.16	GRATUITIES	MAR 1952
12-203	CONVICT LABOR	MAR 1949
12-303	CONTRACT WORK HOURS STANDARDS ACT	JUN 1964
12-804	EQUAL OPPORTUNITY	APR 1971

(b) Disputes (Amendment of Sep 1968). Add the following to Clause No. 7-103.12(a):

"(c) The provisions of (a) above shall not apply to disputes which are subject to the jurisdiction of a Federal, State, or other appropriate regulatory body. The provisions of (a) above shall also be subject to the requirements of the law with respect to the rendering of utility services and the collection of regulated rates. (1968 SEP.)"

TECHNICAL AND GENERAL PROVISIONS FOR UTILITY SERVICE (Cont'd)

11. CONNECTION CHARGE.

(a) Charge. In consideration of the Contractor's furnishing, at its expense, the facilities required to provide service hereunder, upon demand of the Contractor prior to the issuance of the specifications for each construction contract pursuant to which the facilities to provide service hereunder are to be constructed, the Government shall pay the Contractor, as a connection charge, the actual cost of the facilities, estimated at the sum of Nine Hundred Thousand Dollars ($900,000); Provided, that in the event the specifications pursuant to which the facilities required to provide service hereunder are to be constructed are otherwise ready to be issued and said payment has not been received by the Contractor, it shall not be obligated to provide for said facilities and this contract shall be void. In the event the actual cost of construction attributable to facilities required to provide service hereunder, as determined by the Contractor in the manner hereinafter set forth, exceeds the connection charge, upon demand of the Contractor, Government shall pay to the Contractor the difference between said actual cost of construction and the connection charge. The actual cost of construction attributable to the facilities required to provide service hereunder shall include the entire cost of construction of facilities constructed solely for such service plus a pro rata share of the cost of all facilities which have a part of their design capacity attributable to service to Government pursuant to this contract, said pro rata share to be determined by multiplying the total cost of such facilities by the ratio that the capacity attributable to providing service to Government hereunder is to the total design capacity of such facilities.

(b) Ownership, Operation, and Maintenance of New Facilities. Notwithstanding the payment be the Government of a connection charge, the facilities to be supplied by the Contractor under this contract shall remain the property of the Department of Interior until otherwise provided by Congress and, at all times during the life of this contract or any renewals thereof, shall be operated and maintained by the Contractor, or the Bureau of Reclamation, Department of Interior.

TECHNICAL AND GENERAL PROVISIONS FOR UTILITY SERVICE (Cont'd)

(c) Termination prior to completion. The Government reserves the right to terminate this contract at any time prior to completion of the facilities provided for herein with respect to which it is to pay a connection charge. In the event the Government so terminates this contract, it shall be responsible for all obligations and expenses incurred by the Contractor which are attributable to facilities required to provide service pursuant to this contract.

12. ADVANCE PAYMENTS.

(a) Amount of Advance. At the request of the Westlands Water District, Fresno, California, and subject to the conditions hereinafter set forth, the Navy will make an advance payment to the Westlands Water District (hereinafter referred to as the "Contractor"), not to exceed the amount of $900,000. No advance payment will be made (i) without the approval of the Office of Banking and Contract Financing, Office of the Comptroller, Department of the Navy (hereinafter called the "Administering Office"), or such other office as the Administering Office may designate, as to the financial necessity therefor, (ii) in an amount which shall exceed $900,000; (iii) without a proper invoice.

(b) Use of Funds. The funds will be used by the Contractor solely for the purpose of making an advance payment to the Department of Interior to finance items of allowable cost incurred or to be incurred in the performance of this contract. Any interpretation required as to the proper use of funds shall be made in writing by the Administering Office.

(c) Interest Charge. Interest will not be charged the Contractor on advance payments made hereunder.

(d) Return of Funds. The Contractor may at any time repay all or any part of the funds advanced hereunder and shall at any time, if so requested in writing by the Administering Office, repay to the Navy such part of the unliquidated balance of advance payments as shall, in the opinion of the Administering Office be in excess of current requirements. If the amount of the costs of the contract is reduced. the Contractor will immediately refund an amount of the advance payment equal to the reduction in the contract price.

TECHNICAL AND GENERAL PROVISIONS FOR UTILITY SERVICE (Cont'd)

(e) Liquidation. If not otherwise liquidated, the advance payment made hereunder shall be liquidated as herein provided. When the work provided for under this contract is completed, the Contractor shall submit an invoice for payment of the Connection Charge provided for in the contract. The amount due the Contractor therefor will be applied in liquidation of the unliquidated advance payment. If, upon completion of such transaction the advance payment has not been fully liquidated, the balance thereof shall be deducted from any sums due or which may become due to the Contractor from the Government, and any deficiency shall be paid immediately by the Contractor to the Government upon demand.

(f) Default. In the event that the contract is terminated by reason of fault of the Contractor, the full amount of the unliquidated advance payment shall be immediately repaid to the Government by the Contractor.

(g) Authority. The incorporating of advance payment provisions in this contract is made under the authority of Title 10 U.S.C. 2307.

113.2:ES:kb
N62474-72-C-4013

8 DEC 1972

Regional Director
U.S. Department of Interior
Region II, Bureau of Reclamation
2800 Cottage Way
Sacramento, CA 95825

Attention: Mr. Catino

Gentlemen:

Enclosed is a conformed copy of Contract N62474-72-C-4013 for water service at Naval Air Station, Lemoore, California, with the Westlands Water District.

Funds are available for advancement in accordance with Paragraph 12 of the Technical Provisions of the contract.

Sincerely yours,

R. C. [illegible]
Head, Commercial Utilities Branch

Encl:
(1) Conformed Copy
N62474-72-C-4013

Copy to:
Westlands Water District
P.O. Box 5222
Fresno, CA 93755

TRANSACTION REPORT

Transmission
Transaction(s) completed

NO.	TX DATE/TIME	DESTINATION	DURATION	PGS.	RESULT	MODE
200	JAN. 20 11:19	4159745914	0° 11' 48"	037	OK	N ECM

Westlands Water District

3130 N. Fresno Street, P.O. Box 6056, Fresno, California 93703-6056, (209) 224-1523, FAX: (209) 241-6277

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL # of pages ▸ 9

To PHYLLIS POTTER	From S. SIKAND
Dept./Agency TT	Phone # EFA WEST
Fax # (415) 974-5914	Fax # (650) 244-3206

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

January 8, 1998

Commanding Officer
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Attention: Mr. Surinder Sikand, Environmental Planning Branch (Code 70311)

Gentlemen:

Subject: Comments on the Draft Environmental Impact Statement for the Development of Facilities to Support US Pacific Fleet F/A-18E/F Aircraft

Westlands Water District is providing the following comments for the above referenced DEIS. Westlands has reviewed similar documents relating to increasing the number of squadrons based at NAS Lemoore. During past correspondence, copies enclosed, we have stated that we may not always be able to deliver the 3,000 acre-feet of water under the contract between the Navy and Westlands. Westlands noted that we may have to ask our M&I customers to share in future contract water supply shortages.

These comments are directed to the water supply issues as identified in the DEIS prepared to analyze the impacts resulting from the proposed development of facilities for F/A-18E/F aircraft squadrons. In particular we reference sections 3.10.1 (pages 3-96 and 3-97) and

TRANSACTION REPORT

Transmission
Transaction(s) completed

NO.	TX DATE/TIME	DESTINATION	DURATION	PGS.	RESULT	MODE
201	JAN. 20 11:31	209 998 4076	0° 12' 01"	037	OK	N ECM

Westlands Water District
3130 N. Fresno Street, P.O. Box 6056, Fresno, California 93703-6056, (209) 224-1523, FAX: (209) 241-6277

January 8, 1998

OPTIONAL FORM 99 (7-90)
FAX TRANSMITTAL # of pages ▸ 37
To BILL O'DONNELL/CHRIS From S. SIKAND
Dept./Agency NAS LEMOORE Phone # EFA WEST
Fax # (209)998-4076 Fax # (650)244-3206
NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

Commanding Officer
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Attention: Mr. Surinder Sikand, Environmental Planning Branch (Code 70311)

Gentlemen:

Subject: Comments on the Draft Environmental Impact Statement for the Development of Facilities to Support US Pacific Fleet F/A-18E/F Aircraft

Westlands Water District is providing the following comments for the above referenced DEIS. Westlands has reviewed similar documents relating to increasing the number of squadrons based at NAS Lemoore. During past correspondence, copies enclosed, we have stated that we may not always be able to deliver the 3,000 acre-feet of water under the contract between the Navy and Westlands. Westlands noted that we may have to ask our M&I customers to share in future contract water supply shortages.

These comments are directed to the water supply issues as identified in the DEIS prepared to analyze the impacts resulting from the proposed development of facilities for F/A-18E/F aircraft squadrons. In particular we reference sections 3.10.1 (pages 3-96 and 3-97) and

- Letter 12 –
Westlands Water District
Response to Comment

12-A Westlands Water District (WWD) currently supplies NAS Lemoore with water through a contract. WWD has indicated that it cannot guarantee an additional allocation of water for Municipal & Industrial Use (M&I) and has suggested possible alternatives for meeting future increased M&I water needs. One option available to NAS Lemoore is to reapportion its current water allocation from WWD by claiming an additional 1,000 acre-feet for M&I uses and suballocating the remainder to agricultural uses. The decrease in water availability to farm interests on-base would be insignificant.

There are 18,500 acres of agricultural land at NAS Lemoore. Each acre of agricultural land is allocated 2.7 acre-feet per year. The actual allocation to on-base agriculture varies from year-to-year but historically has averaged 65 percent of the total allocation. Based on the total agricultural acreage (18,500 acres), the per acre allocation of water (2.7 acre-feet), and the historical allocation (65 percent), the total annual allocation for agriculture on-base averages 32,467.5 acre-feet. The reallocation of 1,000 acre-feet of water for M&I use with the proposed action would leave 31,467.5 acre-feet per year for agricultural use.

January 28, 1998

Commanding Officer
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Attn.: Mr. Surinder Sikand, Code 70311

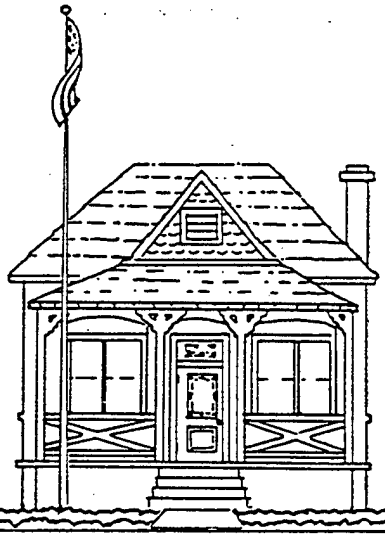
Dear Commanding Officer:

This letter is written to convey the complete support of the Lemoore District Chamber of Commerce to the project to locate the new F/A-18E/F aircraft aboard NAS Lemoore. With the existing facilities already in place to support the F/A-18C/D aircraft, it makes sound business sense to bring the new F18 to NAS Lemoore.

The Lemoore community enjoys an excellent relationship with the Air Station and frequently joins in a partnership for community events and education programs which involve local schools and various base commands. This mutual support establishes a strong connection that we wish to maintain.

NAS Lemoore employs over 1,320 local people and conducts business with over 300 contractors for routine needs as well as special projects. With an active duty population in excess of 5,500 and their dependents nearing 13,000, the base has a great economic impact on our local economy. As these figures indicate, the base is an essential element of our socio/economic community.

We are proud to have NAS Lemoore as an economic development partner and strongly support the growth of the base with the addition of the new F/A-18E/F aircraft. 12A-A



Sincerely,

Jeff Levinson
President

Carlos A. Diniz
Executive Director

Lemoore District Chamber of Commerce
218 West D. St. Lemoore, CA 93245 (209) 924-6401
Home of Naval Air Station Lemoore

- Letter 12A –
Lemoore District Chamber of Commerce
Response to Comment

12A-A Your interest in the F/A-18E/F action is appreciated, and your support of the preferred alternative is noted.

FRESNO CHAMBER OF COMMERCE

January 28, 1998

Department of the Navy
Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Dear Interested Party,

The Fresno Chamber of Commerce supports the Draft Environmental Impact Statement for Development of Facilities to Support Basing US Pacific Fleet F/A-18E/F Aircraft on the West Coast of the United States.

The proposed action evaluated in the DEIS includes sitting 164 F/A-18E/F aircraft, locating associated military personnel and family members, and providing associated training functions at the receiving installation. The two installations considered for the West Coast are Naval Air Station (NAS) Lemoore and Naval Air Facility (NAF) El Centro. NAS Lemoore is the preferred alternative evaluated in this EIS. The Chamber believes either location would benefit the Valley.

For NAS Lemoore, the proposed action would result in an increase of 92 new aircraft and the replacement of 72 existing F/A-18C/D aircraft. Basing the aircraft at NAF El Centro, which does not have existing strike fighter squadrons, would result in an increase of 165 aircraft at the installation.

On behalf of our 2300 members the Fresno Chamber of Commerce Board is excited about the positive impacts this project would have on our Valley. 12B-A

Sincerely,

Stebbins F. Dean
Executive Director

P. O. Box 1469 · 2331 Fresno Street · Fresno, CA 93716-1469 · Tel 209-495-4800 · FAX 209-495-4811

- Letter 12B –
Fresno Chamber of Commerce
Response to Comment

12B-A Thank you for your interest in the proposed action; your support on behalf of the Fresno Chamber of Commerce is noted.



WILDERNESS WATCH *of the Eastern Sierra*
POST OFFICE BOX 2506, MAMMOTH LAKES, CA 93546

Mr. Surinder Sikand, Code 18511
U.S. Navy - Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

1-22-98

SUBJECT: COMMENTS ON DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS) FOR DEVELOPMENT OF FACILITIES TO SUPPORT THE WEST COAST BASING OF THE F/A-18E/F AIRCRAFT

Wilderness Watch is a national non-profit organization dedicated to fostering the proper stewardship of America's designated Wildernesses and Wild & Scenic Rivers. Wilderness Watch of the Eastern Sierra (WWES) is a chapter of Wilderness Watch that monitors wilderness conditions, and actions that may affect wilderness, in our area. Members of WWES regularly use wilderness areas of the Eastern Sierra for their recreational, scenic, scientific, and other values, and are thus directly affected by this proposal.

We have reviewed the above-referenced environmental document, and we are very concerned about the proposed action to site as many as 164 new F/A-18 aircraft as proposed. We are especially concerned that the DEIS fails to analyze or disclose impacts of the proposed action on wilderness resources in the Sierra Nevada, the White Mountains, and the Inyo Mountains, including quietude and biological resources. 13-A

The DEIS is clearly deficient, and needs to be supplemented to recognize three key facts:

1. Anyone who visits wilderness in the Eastern Sierra can readily observe that military pilots routinely violate the existing AGL ("above ground level") advisories. The low-level military flights that commonly occur over wilderness areas in the Eastern Sierra (including the Sierra Nevada, White Mountains, and Inyo Mountains) produce significant noise, and result in loss of the natural quiet and in substantial adverse impacts on the wilderness character. 13-B

2. The proposed increase in military flights due to expansion of fighter jet fleets at Lemoore and/or El Centro Naval Air Stations would likely exacerbate the current problems with low-level overflights of wilderness in the Eastern Sierra, resulting in significant adverse impacts to the environment (which must be analyzed and disclosed pursuant to the National Environmental Policy Act) and to the wilderness character (which must be avoided pursuant to the Wilderness Act). 13-C

3. Even if military pilots were to observe the existing AGL advisories, the current level of military flights would still result in significant disruption of the natural quiet over wilderness areas of the Eastern Sierra, and the proposed increase in overflights would therefore constitute a significant, cumulative impact. 13-D

Because of these key truths, the DEIS must be supplemented to include a serious analysis and disclosure of the present impacts resulting from military overflights in the Eastern Sierra, as well as the additional impacts that would result under the various alternatives presented in the document.

The key impact area that needs to be evaluated is noise. The levels of noise generated by military jets can and does seriously degrade the natural quiet of wilderness in the Eastern Sierra, adversely affecting not only wilderness visitors, but wildlife as well. For example, bighorn sheep are known to be sensitive to noise generated by low-level aircraft. Because the few remaining Sierra Nevada bighorn sheep are seriously threatened with extinction, this species should not be subjected to any avoidable impact that could further reduce it chances for survival. 13-E

We strongly urge you to put this proposal on hold until these issues are properly analyzed and impacts disclosed as required by NEPA. We also urge you to modify or mitigate the proposal in order to protect the wilderness character, as required by the Wilderness Act. This requires, at a minimum, an objective evaluation of the expected impacts of the proposal on the natural quiet of the Eastern Sierra's wilderness areas, as well as an objective evaluation of the ability of any modified proposal or mitigation measures to offset the potential impacts of military overflights on wilderness resources. We cannot over-emphasize the importance of these issues to WWES. 13-F

Please send to me, at the letterhead address, copies of all planning and decision documents related to this proposal, and provide timely notification of all opportunities for public comment.

Sincerely,

Gary Guenther
Wilderness Watch of the Eastern Sierra

- Letter 13 –
Wilderness Watch of the Eastern Sierra
Response to Comments

13-A The final EIS has been revised to include a discussion of impacts of the proposed action on wilderness areas and national parks in the Sierra Nevada (see sections 4.1 and 4.7 of the final EIS). Please see the response to comments 2-C, 2-E, and 2-F for additional discussion of noise in national park and wilderness areas, and the responses to comments 3-A, 3-B, 3-C, and 3-D for an additional discussion of biological issues.

13-B Military flights within the R-2508 Complex are required to observe the 3,000-foot AGL restriction over Sequoia National Park, Kings Canyon National Park, the 1977 boundaries of the former Death Valley National Monument, and the 1977 boundary portion of the Domeland Wilderness Area. Noise levels produced by F/A-18 aircraft operations in the R-2508 Complex are discussed in Section 4.7 of the final EIS. As discussed in the response to comment 2-D, the Navy is working to curtail violations of altitude restrictions by its pilots. The Navy also is working with other DOD branches of the military, as well as the National Park Service and other interested parties, to address this issue. Discussion of procedures by the Navy and other branches of the military for addressing violations of altitude restrictions has been added to Section 3.1 of the final EIS. Please see also the response to comment 2-D.

13-C Noise levels produced by F/A-18 aircraft operations in the R-2508 Complex are discussed in Section 4.7 of the final EIS. As discussed in the response to comment 2-D, complaints regarding low altitude flights within R-2508 constitute only 0.32 percent of military aircraft operations within R-2508. If the frequency of complaints remains unchanged, Phase 1 of the proposed action would result in 24 additional complaints per year. Since one-third of the complaints are confirmed nonviolations of flight restrictions, the proposed action would result in approximately 16 actual violations of altitude restrictions. The Navy is committed to further reducing the number of violations through the processes described in the response to comment 2-D.

13-D Military aircraft within the R-2508 Complex are required to observe the 3,000-foot AGL restriction only over those areas of the national parks and wilderness areas that are designated in the *R-2508 User's Handbook*. The *R-2508 User's Handbook* states that flight operations within the R-2508 Complex are prohibited below 3,000 feet AGL over Sequoia and Kings Canyon national parks, the portion of the John Muir wilderness within the boundaries of Sequoia and Kings Canyon national parks, the 1977 boundaries of the former Death Valley National Monument, and the 1977 boundaries of the Domeland Wilderness Area. (Figure 3-2 in the EIS). Additional areas of Death Valley National Park and the John Muir Wilderness Area, other wilderness areas, and other public lands within the R-2508 Complex are not subject to the 3,000-foot AGL altitude restriction. See the discussion of overflight of national parks and wilderness areas in Section 3.1, Land Use and Airspace.

Noise under existing and future conditions is presented in sections 3.7 and 4.7, Noise, of the EIS. The additional aircraft would increase the frequency of noise events but would not significantly increase overall noise levels. Please see the response to comments 2-C, 2-E, and 2-F for additional discussion of noise impacts on national parks and wilderness areas.

Most noise concerns relate to occasional disturbance by individual aircraft overflights and not high average noise levels. The draft EIS provided estimates of peak overflight noise levels at various distances from the flight path of F/A-18E/F aircraft operating at various power settings (see Table

4-26 of the draft EIS). The final EIS provides additional information, including revised flyover event noise analyses, based on the latest noise information for F/A-18E/F and F/A-18C/D aircraft. In general, any F/A-18E/F aircraft flying at an altitude of less than 10,000 feet AGL can produce a noticeable flyover noise event along the flight path. F/A-18E/F aircraft operating at a cruise power setting are unlikely to cause a significant noise disturbance from flyovers. Aircraft operating at a military power setting, however, are likely to generate noise levels that would be considered disruptive by park and wilderness visitors.

NAS Lemoore is only one of several military installations that use the R-2508 Complex. The Phase 1 increase in NAS Lemoore-based sorties to the R-2508 Complex would cause only a 19.5 percent increase in overall range use, and would not produce a noticeable increase in average noise levels. The increase in the number of individual disruptive overflight events will likely be proportional to the increase in overall flight activity in the R-2508 Complex. The relatively small increase in the frequency of such events would not be recognizable to most wilderness users.

13-E The draft EIS provides estimates of peak overflight noise levels at various distances from the flight path of F/A-18E/F aircraft operating at various power settings (see Table 4-26 of the draft EIS). The final EIS provides additional information, including revised flyover event noise analyses based on the latest noise information for F/A-18E/F and F/A-18C/D aircraft. Please see the response to comment 3-B for a discussion of the Peninsular and California (Sierra Nevada) bighorn sheep.

13-F The document has been modified to include a discussion and analysis of potential impacts to national park and wilderness areas by the proposed action. Please see the response to comment 2-M for suggested modifications to aircraft operations over the Sierra that have been considered by the Navy.

The Toiyabe Chapter of the Sierra Club

Nevada and Eastern California

PO Box 8096, Reno, NV 89507

One Earth, One Chance.

1-22-98

United States Navy
Attn: Mr. Surinder Sikand (Code 18511)
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066

Dear Mr. Sikand:

This letter transmits the comments of the Sierra Club Range of Light Chapter regarding the **Draft Environmental Impact Statement for Development of Facilities to Support the West Coast Basing of F/A-18E/F Aircraft** ("DEIS").

We are very concerned about impacts that result from the current level of military flights over public lands of the Sierra Nevada and other surrounding areas, and we are furthermore concerned that the DEIS does not address the increase in impacts that will likely result from increasing the fighter jet fleet at Lemoore NAS as proposed.

As you must know, there exists an acute problem over portions of the Sierra range and in many areas of eastern California with low-flying military aircraft, and it is only logical to conclude that the existing problems will be made worse by significantly increasing the number of military aircraft that fly over these areas, as is proposed in the DEIS. Furthermore, the cumulative effects of noise generated by additional aircraft flying at higher elevations also must be evaluated. 14-A

The Sierra Club is concerned about the adverse effects of noise on recreationists, as well as on wildlife that are known to be sensitive to noise generated by aircraft overflights, such as bighorn sheep. The Sierra Nevada bighorn herds are particularly threatened, and any additional stresses on those populations should be avoided. 14-B

The Sierra Club Range of Light Chapter hereby requests that the DEIS be expanded to include an analysis of the potential impacts expected to result due to an increase in military overflights of national parks, national forests, wilderness areas, and other public lands. The current DEIS is seriously flawed because it contains no such analysis, nor any evaluation of potential mitigation measures. We further request that the public be allowed an opportunity to review a revised DEIS before it is made final. 14-C

Please keep us fully informed as your planning process proceeds.

Sincerely,

Wilma Wheeler

Wilma Wheeler
Chair, Range of Light Group

- Letter 14 -
The Toiyabe Chapter of the Sierra Club
Response to Comments

14-A Discussion of low-level flights over the parks and wilderness areas has been added to Sections 3.1, 3.7, 4.1, and 4.7 of the final EIS. Phase 1 of the proposed action will increase flight operations by military aircraft within the R-2508 complex by about 19.5 percent over current levels. In general, it takes a doubling of noise source activity to produce a 3 dBA increase in noise levels. A 19.5 percent increase in flight activity will increase overall noise levels within national parks and wilderness areas by less that 1 dBA.

14-B The Navy also is concerned about the effects of aircraft noise in sensitive resource areas and is studying its effects on park users and assessing methods to alleviate it. Please see the response to comment 2-J concerning measures to alleviate noise concerns by park users and the response to comment 3-B for a discussion of noise impacts on bighorn sheep.

14-C The draft EIS provided estimates of peak overflight noise levels at various distances from the flight path of F/A-18E/F aircraft operating at various power settings (see Table 4-26 of the draft EIS). The final EIS provides additional information, including revised flyover event noise analyses based on the latest noise information of F/A-18E/F and F/A-18C/D aircraft. Additional discussion of low-level flights over parks and wilderness areas has been added to sections 3.1, 3.7, 4.1, and 4.7 of the final EIS.

Letter 15

SIERRA CLUB

85 Second Street, Second Floor San Francisco, CA 94105-3441
415 • 977 • 5500

January 7, 1998

Commanding Officer
Naval Facilities Engineering Command
900Commodore Drive
San Bruno, CA 94066-5006
Attn.: Surinder Sikand

Dear Sir,

As a frequent visitor to the High Sierra, I have been subjected to the noise of military aircraft. I know that daily training flights disturb the natural quiet in such areas as Sequoia and Kings Canyon National Parks and the John Muir Wilderness and other areas of the High Sierra and have been responsible for complaints when hikers, climbers and equestrians have been startled and greatly disturbed by the sudden, loud noise. Biologists are concerned that noise from these overflights is affecting the endangered Sierra Nevada bighorn sheep. The flights also imperil the National Park Service's search and rescue helicopters.

Now I understand that the U. S. Navy has released a draft plan to increase the F-18 fighter fleet at Lemoore Naval Air Station by 92 jets. These new aircraft would substantially raise the level of noise in these areas of biological and recreational importance as they travel to training ranges in the California desert and Nevada. 15-A

The National Environmental Policy Act requires the Navy to disclose the potential environmental impact of these additional overflights in the High Sierra, as well as ways in which adverse effects could be mitigated. For example, these jets could cross the Sierra over portions of the southern Kern Plateau, or be restricted to higher elevations over High Sierra parks and wilderness areas. 15-B

I would appreciate receiving a copy of the "DEIS for the location of FA-18 aircraft on the West Coast."

Sincerely,

Edgar Wayburn

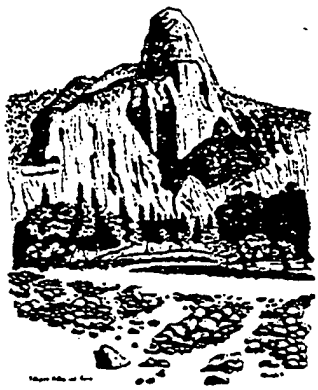
Edgar Wayburn, M.D.
Honorary President

Recycled Paper with Soybean Ink

- Letter 15 –
Sierra Club
Response to Comments

15-A The new F/A-18E/F aircraft would be conducting operations similar to existing F/A-18C/D aircraft and would produce similar noise levels. The draft EIS provided estimates of peak overflight noise levels at various distances from the flight path of F/A-18E/F aircraft operating at various power settings (see Table 4-26 of the draft EIS). The final EIS provides additional information, including revised flyover event noise analyses based on the latest noise information of F/A-18E/F and F/A-18C/D aircraft. Additional discussion of low-level flights over parks and wilderness areas has been added to sections 3.1, 3.7, 4.1, and 4.7 of the final EIS.

15-B Additional discussion of low-level flights over parks and wilderness areas has been added to sections 3.1, 3.7, 4.1, and 4.7 of the final EIS. The FAA establishes flight corridors that military aircraft can use for travel between military bases and training range areas. Flight restrictions and procedures within the R-2508 Complex are established by the JPPB and the FAA.



Tehipite Dome by Doug Harwell, 1981

Tehipite Chapter ● Sierra Club

To explore, enjoy and preserve the nation's forests, waters, wildlife and wilderness

From: John Rasmussen
35680 Ennis Road
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mailto:bigbaldy@gte.net
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Monday, January 26, 1998

Commanding Officer
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006
Fax: (650) 244-3206

Attn: Mr. Surinder Sikand, Environmental Planning Branch, Code 70311

Dear Mr Sikand:

Subject: Comments on "DEIS for the location of F/A-18 aircraft on the West Coast."

There are three specific issues that I believe need to be addressed by the Navy in placement of aircraft at Lemore Naval Air Station: 1) Noise, 2) Visual Quality, and 3) Air Quality. 16-A

We are very concerned about the impacts that additional aircraft will have on our local National Parks (Yosemite, Kings Canyon, and Sequoia) and on designated Wilderness areas within the Sierra Nevada. 16-B

Noise and Visual Quality are primary concerns of visitors of our National Parks and Wilderness Areas. A primary goal of these areas is to provide solitude and a natural scene untrammeled by man. Aircraft that cross these areas should fly at altitudes, speeds, and aircraft configurations that minimize noise and visual contact including jet contrails. 16-C

Noise and visual contact can also present a safety hazard to the wilderness backcountry user. Noise can startle horses causing injury either to the rider or to hikers alongside the trial as the horse passes. Rock climbers can loose their balance resulting in injury or even death. Low flying aircraft or aircraft flying at high speeds can generate shock waves that dislodge rocks or generate avalanches.

The National Parks are a Class I air quality area. At present Yosemite, Kings Canyon and Sequoia have many days when they are in non-attainment. The over flights of additional aircraft must be accounted for in calculating pollutants added to these non-attainment areas. The EIS must address methods of restricting flights over National Parks on non-attainment days. 16-D

We are also concerned about the impacts that additional aircraft will have on wildlife in the Sierra Nevada and in the San Joaquin Valley. Noise can have a significant impact on a number of Sierra species. Additional air quality impacts can also significantly impact species. Unburned fuels deposited in high mountain lakes may also present a hazard to these delicate ecosystems. 16-E

The military has a long history of failing to control low altitude flying in the Sierra Nevada. The Navy needs to identify better methods of control and monitoring of low-flying aircraft. The public needs to see that action is taken when aircraft violate the rules. 16-F

For your information I have included the National Sierra Club's policy on Noise and Military Air Space.

National Sierra Club Policy on Noise and Military Airspace

- Military Lands/Airspace Policy

INTRODUCTION

All public agencies, including the Armed Services and the Department of Defense, should strive to protect the integrity of human and natural communities. Military training and preparedness should be pursued in ways that avoid or minimize adverse effects.

l. Land Acquisition by the Military

All proposals by the Armed Services (including state Guards) and the Defense Department to acquire new lands should be based on comprehensive assessments of projected needs for their operations and various ways to meet those needs. Alternatives that should be considered should include use of bases abroad, shared use of sites among services, high-tech simulations, and other options that reduce impacts on the environment. Public involvement in the design and conduct of these assessments should be encouraged and opportunity provided for public review and comment. Final decisions should be environmentally responsible.

The total size of the land base held by the Armed Services and the Defense Department should not increase appreciably. Where a given area must be acquired, the Armed Services and the Defense Department should return lands of greater natural and ecological value to the civilian sector, preferably in the same ecosystems. If public lands are acquired for military purposes, lands should be relinquished in compensation to public land management agencies so there is no net loss of public lands. Relinquished lands should be free of unexploded ordnance and contaminants, be cleaned up, and be in healthy condition. Where possible, returned lands with rare, endangered, threatened or unusual native plants and animals should be placed under the jurisdiction of an agency with the expertise and resources to protect them.

2. *Military Overflights and Airspace Reservations*

Overflights at supersonic speeds and by low-flying aircraft (under 2000 feet) are inappropriate over environmentally sensitive lands, such as national and state parks and monuments, wildlife refuges, units of the National Wilderness Preservation System, Wilderness Study Areas, and areas containing sensitive wildlife, cultural or spiritual values. Such flights should not be permitted unless it can be shown that the flights will not harm them nor detract from their value, or it has been demonstrated that no viable alternative exists. Aviation fuel should not be dumped on these areas nor should bombing practice occur there, nor should these occur in Marine and Estuarine Sanctuaries. For the latter areas, regulations should be developed, based on evaluations of impacts, to avoid adverse impacts on users and marine life from overflights.

Except in cases of war and emergency, flights by military aircraft and personnel over public lands not under military control should be subject to requirements no less strict than those that apply to civilian aircraft. Changes in military airspace should be based on overall assessment of needs and alternatives.

3. *Military Training and Testing on Public Lands*

Where military training and testing is authorized on public lands, it should avoid impacting civilian recreational activity. To protect public health and safety, it should occur in areas segregated in space and time from those used by civilians (though, cooperative projects may occasionally be appropriate for such activities as clean up,

ecosystem mapping and management, and restoration of damaged areas). Following use of such lands, the military should restore their condition (where possible) and return them to civilian use. Toxics and ordnance should be removed and debris, such as chaff and litter, cleaned up in ways that minimize disturbing natural features.

The public, as well as Congress, should have an opportunity to review and comment on any proposal to authorize military use of public lands. Such use should be authorized only when no viable alternative exists. Such use should only be authorized on a case-by-case basis for a limited period.

The Armed Services and the Defense Department should protect biodiversity and wilderness values on lands affected by their uses. They should be good neighbors and safeguard adjacent lands owned by others from contamination and adverse effects.

4. Public Participation and Citizen Involvement

The Defense Department should establish various advisory committees which it should consult prior to making decisions and taking actions related to acquiring land, withdrawals, exchanges, disposals, reservation of airspace, and on policy governing overflights, training exercises on public lands, restoring degraded areas, and managing waste.

Moreover, the public should have opportunities to be involved on such matters through notice and comment procedures, open forums, steering groups, appeal procedures, and other mechanisms provided under NEPA and other laws and regulations applying generally to other federal agencies. Under NEPA, analysis of impacts and alternatives needs to occur before decisions are made and options are foreclosed.

Board of Directors, May 18-19, 1996

- **NOISE POLLUTION**

The Sierra Club urges local, state, and federal government to adopt policy on noise that will:

1. Encourage and sponsor larger-scale research projects on noise control, including development of quieter jet engines, mufflers for diesel engines, noise insulation for buildings, etc.
2. Use predicated noise levels surrounding new or expanding airports, VTOL and STOL ports, etc., in location of facilities, establishing of flight patterns, and in creation of zoning laws to restrict residential use of areas most seriously affected.
3. 3. Develop legislation to designate an agency independent of operating or program responsibility for maintaining a suitable noise environment.
4. Provide those agencies which have been given the responsibility of enforcing noise ordinances with sufficient funds and manpower to exercise that responsibility.
5. Settle jurisdictional disputes among agencies concerning noise ordinance enforcement.
6. Require an inclusion of a noise element on all master plans.
7. Insert noise control measures into building codes for all new homes, apartments, offices and factories to provide adequate protection from external and internal noise.
8. Use economic incentives such as fines and licensing fees to encourage the elimination or reduction of noise.
9. Include noise limits in government specifications of aircraft, autos, appliances, etc., and otherwise use governmental purchasing power to encourage development and production of quieter equipment.
10. Prohibit operation of civil aircraft under conditions that produce sonic booms audible at the surface of the Earth; restrict supersonic operation of military aircraft to essential flights over areas preselected to minimize human and ecological damage.
11. Establish safe noise levels and duration of exposure that is acceptable for personnel in working environment, and including inspection and enforcement procedures.

Tehipite Chapter ● Sierra Club

May 2-3, 1970
Policy Code 8.2
[Excerpt from policy on] Off-Road Use of Vehicles Mufflers and spark-arrestors should be made mandatory on all motorized vehicles used off-road, with provision for periodic inspection. May 7, 1988 Policy Code 6.2

Sincerely,

John Rasmussen

John Rasmussen
Tehipite Chapter – Sequoia Committee Chair

- Letter 16 –
Tehipite Chapter Sierra Club
Response to Comments

16-A In the final EIS, please see Section 4.7 for evaluation of noise issues, Section 4.6 for evaluation of air quality issues, and Section 4.2 for evaluation of visual resources. See also appendices E and F for additional technical details concerning procedures used to evaluate air quality and noise impacts from the proposed action.

16-B Additional discussion of low-level flights over parks and wilderness areas has been added to sections 3.1, 3.7, 4.1, and 4.7 of the final EIS. See also the response to comments 2-C, 2-D, 2-E, and 2-F.

16-C The Navy recognizes that overflight noise is a concern to many national park and wilderness area visitors. Additional discussion of low-level flights over parks and wilderness areas has been added to sections 3.1, 3.7, 4.1, and 4.7 of the final EIS. Noise and flight altitude issues have been discussed in the response to similar comments made by other parties (see the responses to comments 2-C, 2-D, 2-E, and 2-F).

Overflight restrictions for sensitive land uses are specified in OPNAVINST 3710.7Q and the *R-2508 User's Handbook*. The relevant chapters of the *R-2508 User's Handbook* have been excerpted and included in Appendix H of the final EIS. Aircraft flying above national parks and wilderness areas are sporadic and transient and would not present a visual impact. Contrails are largely attributable to commercial aircraft due to higher condensation at the higher elevations at which these aircraft fly.

The Navy is concerned about the safety of hikers and equestrians on the ground. As discussed in the response to comment 2-E, low-level flight is permitted only within areas approved by the FAA and DOD for such use.

Aircraft flying at subsonic speeds do not generate shock waves. The physical air pressure fluctuations generated by noise are far too small to dislodge rocks or generate avalanches. Even a sound level of 100 dB produces an air pressure fluctuation of only 0.00029 pounds per square inch (0.0418 pounds per square foot). A noise level of 128 dB is required to generate pressure fluctuations of 1 pound per square foot (1/9 of an ounce per square inch). As indicated by Table 4-27 of the EIS, one would have to be within 200 feet of the engine exhaust of an F/A-18E/F jet at afterburner power to experience such high noise levels. Fluctuations in wind speed will generate much greater pressure fluctuations on ground or snowpack surfaces that will aircraft noise.

16-D Air quality impact analyses and Clean Air Act conformity analyses presented in the draft EIS follow EPA guidance and procedures for estimating emissions from aircraft flight operations. The same procedures and guidance documents are used by state and local air pollution control agencies when they develop air quality management plans. The EPA guidance is to address only those emissions released within 3,000 feet of ground level. Flights between NAS Lemoore and the R-2508 Complex are at much higher altitudes (19,000 to 23,000 feet above msl). Aircraft using the flight corridors between NAS Lemoore and the R-2508 Complex don't come within 3,000 feet of ground level prior to entering the R-2508 Complex. Thus, aircraft flights to and from the R-2508 Complex are properly excluded from the conformity analysis presented in the EIS.

All of the Inyo County and most of the San Bernardino county portions of the R-2508 Complex (including the target ranges at NAWS China Lake) are designated as attainment areas with respect

to the federal ozone standard. Consequently, flight operations within these portions of the R-2508 Complex are exempt from Clean Air Act conformity analysis. The Fresno County and Tulare County portions of the R-2508 Complex are within the San Joaquin Valley air basin, which is designated as a nonattainment area for the federal ozone standard. The Kern County portion of the R-2508 Complex also is designated as nonattainment for the federal ozone standard, but is outside the San Joaquin Valley air basin.

Most flight operations within the R-2508 Complex are also at altitudes of more than 3,000 feet AGL, and thus are excluded from consideration in Clean Air Act conformity analysis. Moreover, most flight operations within the R-2508 Complex do not follow fixed flight paths. Those flight operations within the R-2508 Complex that do occur below 3,000 feet AGL are not predictable events, or aircraft power settings. Consequently, such flight activity is not "reasonably foreseeable" as defined by 40 CFR § 51.853, and is exempt from Clean Air Act conformity analysis under 40 CFR § 51.853 (c) (3).

16-E A discussion of potential noise impacts on sensitive species, such as Peninsular and California bighorn sheep and the Yuma clapper rail, appears in the responses to comments 3-A and 3-B. As discussed in Section 4.6 of the final EIS, the proposed action would result in significant but mitigable air quality impacts. Impacts from increased emissions in the airfield vicinity would be mitigated to less than significant levels and would not be expected to affect any sensitive species in the vicinity of the air station. Emissions from aircraft overflights would be subject to so much natural dispersion as to be immeasurable at ground level. Combustion efficiency of jet aircraft engines is very high; emissions of unburned fuel are much too low to have any measurable impact on aquatic ecosystems. Navy aircraft do not dump fuel during training flights over these areas, however, in the event of an emergency that required fuel to be dumped, natural dispersion would dissipate the fuel before it could reach the ground.

16-F As discussed in the response to comment 2-D, the Navy is taking steps to prevent violations of flight altitude restrictions. See also excerpts from the R-2508 Environmental Baseline Study, included in Appendix H, for a description of complaint data and procedures.

ANGELES CHAPTER · SIERRA CLUB
3345 WILSHIRE BOULEVARD · SUITE 508 · LOS ANGELES · CALIFORNIA 90010 · (213)387-4287 · FAX(213)387-5383

February 2, 1998

Commanding Officer
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006
Attn: Mr. Surinder Sikand, Environmental Planning Branch,
Code 70311

RE: DEIS - PROPOSED WEST COAST BASING OF THE F/A-18 E/F AIRCRAFT

Dear Commanding Officer:

The Angeles Chapter of the Sierra Club, with approximately 50,000 members in southern California, offers the following comments on the DEIS regarding "Proposed West Coast Basing of the F/A -18 E/F Aircraft." The Sierra Club has for over a hundred years been established to "explore, enjoy and protect the wild places of the earth", including many protected areas within the general geographic range impacted by this project. We have previously offered scoping comments.

Thank you for your careful attention and consideration.

Most sincerely,

Dick Hingson

Dick Hingson
Conservation Coordinator

ANGELES CHAPTER · SIERRA CLUB
3345 WILSHIRE BOULEVARD · SUITE 508 · LOS ANGELES · CALIFORNIA 90010 · (213)387-4287 · FAX(213)387-5383

COMMENTS - DEIS: "PROPOSED WEST COAST BASING OF THE F/A-18 E/F AIRCRAFT"

On May 22, the Angeles Chapter of the Sierra Club transmitted extensive scoping comments to you as requested concerning the proposed basing of 92 F-18 jets, under the heading "Proposed West Coast Basing of the F/A-18 E/F Aircraft and Associated Fleet Readiness and Fleet Operational Squadrons".

We hereby incorporate these comments by reference into the current comments, and provide a copy enclosed.

We must again draw the Navy's attention to our opening paragraph of these scoping comments, in which we requested that aesthetics and noise impacts be carefully assessed. We specifically mentioned Joshua Tree National Park and its noise-sensitive sites, and also Anza Borrego State Park, both parks being already severely impacted by the noisy flight training activities of MTR VR-1257.* In addition, we specifically asked that assessment of impacts be likewise provided for any other units of the National Park System and Wilderness Preservation System, or our state park system. 17-A

It appears from the DEIS that the Navy ignored our requests, comments, reference material, etc. We have subsequently learned that the Navy's draft plan was developed without the full inter-agency consultation required by the National Environmental Protection Act (NEPA). The National Park Service confirmed this to me in two ways: (1) personal communication from Ernie Quintana, Superintendent of Joshua Tree National Park; and (2) formal remarks at the Lemoore EIS public meeting on January 7 by Ralph Moore, on behalf of the National Park Service, Kings Canyon National Park. 17-B

In addition, recent information from other interested parties suggests the failure of the Navy to conform both with the letter and spirit of NEPA; specifically, (1) failure, as per scoping requests, to assess and disclose noise impacts to a wide array of noise-sensitive parklands; (2) failure to generally keep interested public agencies and organizations informed; and (3) withholding of facts in the DEIS as to the Navy's intent to keep utilizing VR-1257 through the heart of Joshua Tree NP and Anza Borrego SP as a route for these new jets. 17-C 17-D 17-E

* Map of VR-1257 is attached.

We therefore request the following supplemental action be taken by the Navy:

1. Publicly disclose the potential of this project's audible and other aesthetic impacts to Joshua Tree and Sequoia-Kings Canyon national park wildernesses and visitor use areas. This will require an amended or supplemental draft which can be re-issued for public review.

   We ask that the Navy consult environmental documents are currently available from the Federal Aviation Administration re its rulemaking in progress, on "Special Flight Rules in the Vicinity of Grand Canyon National Park." These reveal a far more elaborate acoustical analysis, with detailed maps of aviation routes and impacts through the airspace of Grand Canyon National Park. 17-F

   Why then, have we not been provided by the Navy with similarly detailed environmental assessments, in view of the frequent low-altitude jet incursions via the training routes from Lemoore NAS, authorized and unauthorized? Particularly in view of the particularly quiet nature of the Parks and Wilderness, it is well known that these routes have potential for <u>significant</u> and <u>controversial</u> impacts over John Muir Wilderness, Sequoia-Kings Canyon NP, Joshua Tree NP, and Anza Borrego Desert SP, among others. 17-G

2. The EIS should identify appropriate mitigation measures. For example, the EIS could identify training routes to be de-certified. For other mitigations, it could identify routing or scheduling strategies that would afford respite to the Parks.

   The Sierra Club supports the comments of The National Parks and Conservation Association (NPCA) (made at Lemoore) on January 7, concerning these NEPA deficiencies, and suggesting mitigation measures which might be responsive to periods of high visitation, for example, or seasons during which species are more sensitive to disturbance. 17-H

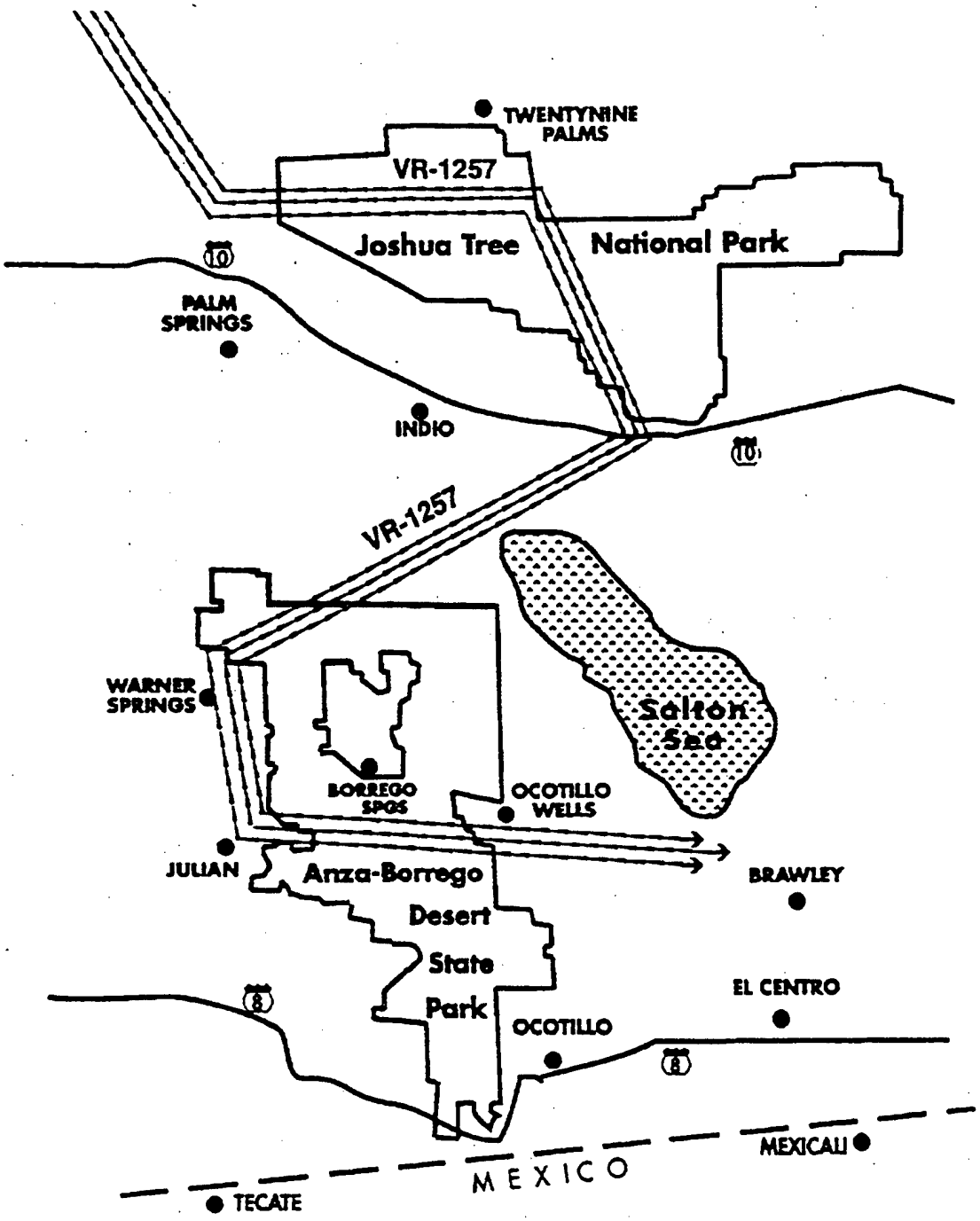
   Certainly the modified draft should contain an explanation and detailed map of flight routes and volumes in the entire, vast region of Southern and Northern California and Nevada which is impacted by Lemoore's training activities. 17-I

Accurate baseline sound profiles of noise-sensitive areas such as National Parks, State Parks, and Designated Wilderness, should likewise be provided, as suggested in our scoping comments. 17-J

There are presumably several other agencies and bases that share MTR VR-1257, as well as the R2508 complex. The modified draft should contain a cumulative impacts section, therefore, that addresses the current and anticipated overall traffic. 17-K

The National Parks Acts of 1916 and 1978, and the Wilderness Act of 1964, and the Transportation Act, Sec. 4(f) have established stringent parameters and considerations as to what is adequate protection for the federally established parklands and wilderness. It is important that the modified draft take laws into full consideration, insofar as they are applicable. 17-L

Therefore, the Sierra Club opposes this project pending full environmental disclosure in accordance with the requirements of the National Environmental Policy Act.



MAP OF VR-1257

SCOPING COMMENTS:

ANGELES CHAPTER · SIERRA CLUB
3345 WILSHIRE BOULEVARD · SUITE 508 · LOS ANGELES · CALIFORNIA 90010 · (213)387-4287 · FAX(213)387-5383

May 22, 1997

Commanding Officer
Engineering Field Activity West
Natural Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5066
ATTN: Mr. Surinder Sikand, Code 18511

Dear Commanding Officer:

The Angeles Chapter of the Sierra Club, with more than 50,000 members in southern California, offers the following scoping comments regarding "Proposed West Coast Basing of the F/A-18 E/F Aircraft."

Thank you for your careful attention and consideration.

Most sincerely,

Laurie Fathe
Chair, Conservation Committee

ANGELES CHAPTER · SIERRA CLUB
3345 WILSHIRE BOULEVARD · SUITE 508 · LOS ANGELES · CALIFORNIA 90010 · (213)387-4287 · FAX(213)387-5383

COMMENTS: PROPOSED WEST COAST BASING OF THE F/A-18 E/F AIRCRAFT AND ASSOCIATED FLEET READINESS AND FLEET OPERATIONAL SQUADRONS

As per NEPA standard guidelines and procedures, the Sierra Club requests that the Department of the Navy carefully address aesthetic/ noise impacts from the proposed project upon **Joshua Tree National Park**, its affected wilderness units, and its special park visitor use areas. This request likewise extends to any other units of the National Park System or Wilderness Preservation System which may be impacted by increased use of Navy training airspace.

Similarly, the Sierra Club requests study of aesthetic impacts including noise impacts from the proposed project upon Anza Borrego State Park and special park visitor use areas. This request likewise extends to any other units of the state park system which likewise may be impacted.

To facilitate this, the glossary of the Environmental Assessment (EA) should contain a listing of the term "aesthetic", together with its complete dictionary definition. We also append for reference in this regard Park Service principles of analysis as to aesthetic impacts upon the Park visitor experience and their assessment and evaluation, particularly re impacts on natural quiet (Appendix A).

With this background as context, the **noise impacts** on the park visitor experience of a significantly increased number of jet overflights per day utilizing military training route VR-1257 directly over noise-sensitive areas of the Park, can be adequately assessed.

The EA should precisely assess the increased noise impacts of military jet overflights utilizing VR-1257 through the **Joshua Tree National Park** generally, affording particular emphasis on (1) Jumbo Rocks Campground/Skull Rock Nature Trail; (2) Queen Valley; (3) Wonderland of Rocks day-use area; (4) Hidden Valley Campground; (5) Hidden Valley Nature Trail; (6) Covington Flat picnic area; (7) Covington Flat trail to Eureka Peak; (8) Belle and White Tank Campgrounds; (9) Cottonwood Campground and Visitor

Center; (10) areas of the park designated for Wilderness Management.

Special visitor use areas and wilderness subunits can be easily identified in the parks' visitor brochures and in visitor tour guides, and in other materials available from state and federal agencies.

The EA should examine noise impacts from proposed military jet utilization patterns over any other parks/wilderness to be impacted.

Methodology for doing this both with actual on-site noise measurements and/or with computer noise modelling has been recently developed and documented by FAA and the National Park Service (NPS) in connection with the Grand Canyon air tour noise abatement Rule-making, and 1994 NPS Report to Congress. Such methodology should be utilized to the fullest extent possible with this EA.

Additionally, we have been informed by Robert B. Pirie, Jr., Assistant Secretary of the Navy, in a letter dated February 10, 1997, that decision-making about interim use of this route awaits the outcome of a study evaluating noise impacts on national parks. This study is commissioned by the Federal Interagency Committee on Aircraft Noise. It is to be conducted by the Department of Defense in cooperation with the Department of the Interior. While the study is in progress, the Navy "will continue to work with the Park Service to obtain empirical data on the exposure of visitors to Joshua Tree National Park to noise from military aircraft," according to Assistant Secretary Pirie.

Joshua Tree National Park and Anza Borrego Desert State Park are desert, rocky, visually dramatic parks, with limited vegetation or ground cover. In this respect, their aesthetic/acoustic environment will have similarities with the Grand Canyon and Zion National Parks. Noise monitoring/inventory in those two parks by NPS in recent years has demonstrated that the baseline natural sound ambience of desert parks is likely to be in the 15 to 20 decibel (dBA) range for prolonged periods.

This extremely low level means that detectability of aircraft there is inevitable at very low signal level, particularly for park or wilderness visitors engaged in active listening enjoyment. And many, if not most visitors to Joshua Tree National Park and Anza Borrego State Parks do come in part to

enjoy the naturally occurring sounds amidst impressive periods of true silence. Even a few aircraft can be an aggravating intrusion for such visitors, who have generally come from a great distance. Military jet noise commonly peaks at levels as much as 40 to 100 decibels above the quieter silent periods inherent in desert natural quiet.

The truth, then, is that an increased usage of routes like VR-1257 would create more noise intrusions, including startle effects, at signal levels far in excess of ambient background, wit potential to ruin or interfere with park/wilderness visitor enjoyment. Documentation of jet noise impacts in such settings has recently become available.

Therefore, given the essential importance of natural quiet to the Parks, the EA should evaluate the impact of the proposed route(s) utilization upon that quiet. For this, it is inappropriate to rely on the sufficiency of urban-area noise standards (as in the FAA's FAR, Part 150, Appendix A, Table 1) for Joshua Tree National Park, for its designated Wilderness Areas, or for other desert parks such as Anza Borrego.

CITATIONS

1. See for example, "Road Guide To Joshua Tree National Park", by Barbara and Robert Decker (Double Decker Press, 4087 Silver Bar Road, Mariposa, CA 95338).

2. User Manual, Low Noise Monitoring System (LOWNOMS), Harris, Miller, Miller, and Hanson, Inc. (NPS Contractor), Lexington, Massachusetts, 1997.

3. Sound Time Histories from Zion and Rocky Mountain National Parks (submitted by National Park Service, 1996, from LOWNOMS field measurements in 1995), placed in FAA Rules Docket No. 28577, "Special Flight Rules in the Vicinity of Rocky Mountain National Park: Final Rule"; also available from Dick Hingson, Sierra Club Angeles Chapter.)

the 1994 NPS Report to Congress, Chapter 3, Sec. 3.1.2 on "Importance of Natural Quiet to the National Park Service", has this to say on the question of aesthetics:

NPS-77, Natural Resource Management Guidelines (NPS 1990), also addresses the issue of protecting aesthetic values. The Guidelines define "aesthetic value" as a:

> *"...value, in the framework of natural resource management in the NPS, that is attributed by people to natural, unmanipulated conditions and is perceived through the senses – by seeing, hearing, touching, smelling, and tasting."*

The Guidelines provide guidance on considering basic questions of aesthetics.

> *"To determine whether a proposed action or activity may affect resources and values important to the aesthetic experience, consideration of the following questions may be helpful. The questions can assist not only in evaluating the activities and actions that take place outside park boundaries, but also in those under the regulatory control of the NPS within park boundaries...*
>
> *Could the action or activity be seen from the park...?*
>
> *Could the action or activity be heard in the park? Where in the park would the sound be most noticeable or intrusive? From developed overlooks, headquarters areas, or trails? Would the sounds be continuous or intermittent? Are there any ways in which the effects of the sound could be mitigated or lessened...?*
>
> *Would the perceptible sight or sound change the nature or quality of the visitor's experience? In what ways...?*
>
> *Does the frequency or duration of the activity or action affect the degree to which it could be perceived?*
>
> *As these questions indicate, systematically looking at the effects of proposed activities or actions aims at evaluating what may be lost..."*

- Letter 17 –
Angeles Chapter Sierra Club
Response to Comments

17-A Aircraft traveling intermittently above national parks and wilderness areas have a brief transition time that would not present a significant visual impact. Noise effects from the proposed action are presented in Section 4.7 of the final EIS.

Additional discussion of existing overflight activity affecting national parks and wilderness areas has been added to the final EIS in sections 3.1 and 3.7. Complete and more comprehensive information relative to policy and procedures for MTRs is published in FAA Handbook 7610.4 (Special Military Operation), which is agreed to by the DOD and the FAA and therefore directive to all military flight operations. VR-1257, as well as other airspace above national parks or wilderness areas, is regulated by agencies other than the Navy and is used by a variety of military aircraft. No modifications to these airspaces are included as part of the proposed action. The proposed action would increase usage of VR-1257, and potential impacts are discussed in sections 4.1 and 4.7 of the final EIS.

In the response to concerns by the National Park Service about VR-1257, the Navy set the flight altitude in VR-1257 route at a maximum allowable altitude of 1,500 feet AGL above Joshua Tree National Park. Further modification to the route is not within the authority of the Navy since flight above 1,500 feet AGL would conflict with VFR routes and is expressly prohibited by the FAA. Discussions between the Navy and the National Park Service to resolve these issues are on-going. The Navy has met with and informed the National Park Service as to the procedures for suggesting changes to this route.

17-B Please see the response to comments 2-G and 2-I for a discussion of interagency consultation.

17-C The draft EIS provided estimates of peak overflight noise levels at various distances from the flight path of F/A-18E/F aircraft operating at various power settings (see Table 4-26 of the draft EIS). The final EIS provides additional information, including revised flyover event noise analyses based on the latest noise information of F/A-18E/F and F/A-18C/D aircraft. Additional discussion of low-level flights over parks and wilderness areas has been added to sections 3.1, 3.7, 4.1, and 4.7 of the final EIS. Please see the response to comment 2-H for a discussion of scoping issues.

17-D Please see the response to comments 2-G and 2-I for a discussion of interagency consultation.

17-E No changes in on-going military training procedures or the elimination of training activities that affect existing range areas or military training routes are part of the proposed action. The proposed action would increase use of MTRs by approximately 1,150 sorties per year. These operations would be distributed among the 24 MTRs available to the Navy in the area. The resulting increase on VR-1257 would be approximately 50 sorties per year, or approximately one sortie per week. This increase would not significantly affect the airspace of VR-1257 or land uses beneath the route. Please see the discussion of VR-1257 in sections 3.1, 4.1, 3.7, and 4.7 of the final EIS.

17-F Analysis of potential impacts to national parks and wilderness areas from the proposed action has been added in sections 4.1 and 4.7 of the final EIS. The Navy is not the controlling agency for airspace over Sequoia and Kings Canyon national parks, but the Navy is participating in R-2508 CCF meetings with the National Park Service to address its concerns.

17-G The draft EIS provided estimates of peak overflight noise levels at various distances from the flight path of F/A-18E/F aircraft operating at various power settings (see Table 4-26 of the draft EIS). The final EIS provides additional information, including revised flyover event noise analyses based on the latest noise information of F/A-18E/F and F/A-18C/D aircraft. Additional discussion of low-level flights over parks and wilderness areas has been added to sections 3.1, 3.7, 4.1, and 4.7 of the final EIS.

17-H Changes in overflight rules or airspace use are regulated by the DOD and FAA. The Navy cannot unilaterally make changes to airspace. No changes to routes or airspace are considered as part of this EIS. See the response to comment 2-M regarding strategies to minimize overflight of national parks suggested by the Sierra Club and other commentors. Please see the response to comment 17-E, above, regarding use of MTRs.

17-I No changes to airspace are included as part of the proposed action. Tables 2-4 and 2-8 of the draft EIS provided data on training areas that would be used by aircraft at each installation. Figures showing airspace in the vicinity of the alternative air stations were provided in Section 3.1 of the draft EIS. Figures 3.1, 3.2, and 3.3 have been added to the final EIS to show the airspace to be used that potentially would affect sensitive land uses.

17-J Existing noise conditions over sensitive land areas is presented in Section 3.7, Noise. Noise-sensitive areas are identified by the R-2508 Complex authority and can be found in the *R-2508 User's Handbook*. Portions of this document are included in Appendix H of the final EIS. Assessment of noise conditions with the proposed action is provided in Section 4.7 of the final EIS.

17-K Table 3-1 has been added to Section 3.1 in the final EIS to identify the major users of the R-2508 Complex. The discussion in Section 3.7 concerning existing flight activity and noise levels along the VR-1257 corridor reflects the overall use of this MTR. The potential realignment of the E-2s to NAF El Centro or NAS Lemoore would not affect VR-1257 since E-2s would fly low-level routes only on very rare occasions. There are no other foreseeable projects that would increase use of VR-1257.

17-L The Navy has considered these laws in assessing impacts of the proposed action. The acts referenced identify resources to be protected but, as discussed in Section 4.7, Noise, many state and federal land management agencies have not adopted quantitative criteria for determining when the magnitude or frequency of a noise event would adversely impact land uses. Noise is, therefore, quantified and discussed in Section 4.7, but a determination as to significance of the potential effects of the proposed action cannot be made.

PO Box 307
Tehachapi, CA 93581
January 24, 1998

Commanding Officer
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Attn. Mr. Surinder Sikand, Environmental Planning Branch, Code 70311

Dear Sir:

I am writing this letter to comment on the Draft Environmental Impact Statement (DEIS) for the location of F/A-18 aircraft on the West Coast. My comments are made on behalf of the Sierra Nevada Ecoregion Task force of the Sierra Club. I would like to relate some personal experiences with low flying aircraft in the Wilderness areas of the Sierra Nevada Mountains and offer some comments about issues the DEIS should address regarding that problem.

Some years ago I was hiking in the Kern Trench in the back country of Sequoia National Park. That area is similar to Yosemite Valley with vertical cliffs extending upward for a few thousand feet above a long narrow valley about one fourth of a mile wide. Suddenly two jet fighter aircraft swooped down through the valley making an unbearably loud and sudden noise as the sound of their engines reverberated between the cliffs. A few days later I met with an officer at Edwards Air Force Base to discuss the problem. He told me pilots were not allowed to fly at such low altitudes over the Sierra and if they were caught they would be grounded. There was no follow through reported to me and I never heard any more about the incident.

A few years later I was hiking with a group of friends at Gomez Meadow in the Golden Trout Wilderness in the southern Sierra. Gomez Meadow lies on the Sierra Crest and at that point there is a narrow notch right at the watershed divide. As we were sitting by the edge of the meadow a military aircraft came swooping by just above the meadow and flew through the notch. The notch is so narrow the aircraft had to bank steeply to avoid having its wings hit the sides of the notch.

There have been many other times when I have observed low flying aircraft in the southern Sierra but the above two incidents were the worst. I have heard of many other such incidents experienced by others and have discussed the problem with National Park Service personnel who have told me they have frequent reports of low flying aircraft over the Wilderness areas of Sequoia/Kings Canyon National Park.

Safety could also be a problem. Many people go into the back country of the Sierra to rock climb. If a rock climber on a dangerous face is startled by a low flying aircraft swooping by he or she could possibly lose their hold resulting in a serious injury or even death.

Low flying aircraft can also have serious impacts upon wildlife. For example the Sierra Nevada Bighorn Sheep has a declining population in the Sierra and is in serious trouble with its survival. It has a very limited habitat. Sudden loud noises from aircraft can frighten it away from the areas where it can survive and put more stress on its chance for survival.

First, I believe the Navy should take a look at the current problem of low flying aircraft before it decides to increase the number of aircraft flying over the Sierra. As far as I can tell if there are rules about flying low over the Sierra they are not being enforced. Complaints are being ignored and not being addressed. The final EIS should address the current problem and discuss methods to deal with it. For example I was told at Edwards AFB that military aircraft are tracked by radar. If this is true why aren't pilots that fly below accepted altitudes reprimanded and disciplined? 17A-A

Secondly, the Navy should analyze and disclose in the Final EIS how the 92 additional fighter jets that are proposed to be stationed at Lemoore NAS will impact the problem of overflights in the High Sierra.. It is my understanding that the fighter jets will need to fly back and forth over the Sierra to reach their training area in the desert to the east. If the pilots are not required to maintain a minimum altitude and prevented from buzzing the canyons and rugged terrain the problem for those on the ground and perhaps wildlife will be intolerable considering the additional aircraft. 17A-B

The Navy should adopt rules that will prevent or at least minimize these problems. For example there should be a minimum altitude below which aircraft are not permitted to fly. The Navy, in consultation with the National Park Service and the Public, could establish a minimum altitude that would prevent serious problems for people and wildlife on the ground. Such a rule would need to be enforced. It should be no problem for the Navy to track aircraft by radar as they cross the Sierra and easily detect violations of a minimum altitude rule. I would be very surprised if aircraft are not already followed on radar as they leave and approach Lemoore NAS. Pilots flying low at hundreds of miles per hour may think it is exciting but they have no idea of the serious shock people below and probably wildlife as well experience during their brief encounter. Electronic detection of violations should be a simple matter. If the impact on people on the ground is not a high priority for the Navy then at least the millions of dollars invested by the taxpayers in each aircraft and training of pilots should not be jeopardized by careless pilots. 17A-C

The Sierra Club recognizes the mission of the Navy in maintaining our National defense. However the Navy must comply with the laws of the land like the National Environmental Policy Act. Documents such as the EIS you are preparing are required to discuss and disclose problems raised by the public and address possible solutions. If overflights of the Sierra Nevada are necessary between Lemoore NAS and training areas to the east, then asking for steps to be taken to minimize problems on the ground when the overflights occur does not seem unreasonable.

I request that I receive a response to my comments on the DEIS. Please keep me informed as this proposal progresses. Thank you for the opportunity to comment.

Sincerely,

Joe Fontaine

Joe Fontaine
Chair, Sierra Nevada Ecoregion Task force
Sierra Club

cc Senator Barbara Boxer
Senator Diane Feinstein
President Bill Clinton

- Letter 17A –
Sierra Club (Sierra Nevada Ecoregion Task Force)
Response to Comments

17A-A The Navy concurs that violations of altitude restrictions over national parks and wilderness areas is an important issue and, as discussed in the response to comment 2-D, is taking steps to curtail these events. Aircraft within R-2508 are tracked on radar and investigation of complaints may include review of radar tracking data to assist in confirming or refuting a complaint. Aircraft in certain areas cannot be reliably tracked by radar due to interference by the surrounding terrain. Recent data for the R-2508 Airspace are presented in the R-2508 Environmental Baseline Study, portions of which have been excerpted and are included in Appendix H of the EIS.

17A-B Analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and sections 3.7 and 4.7, Noise, of the final EIS. Analysis of potential impacts on biota is presented in Section 4.8 of the EIS. Please see the response to comment 3-B concerning the California and Peninsular bighorn sheep.

17A-C Navy flight restrictions above certain national parks and wilderness areas within the R-2508 Complex are discussed in detail in Section 3.1 of the final EIS. Please see the response to comment 2-D concerning measures to curtail low-level overflights and the response to comment 2-M concerning various suggestions that have been made for altering flight operations and schedules.

Letter 18

California Wilderness Coalition

2655 Portage Bay East, Suite 5 • Davis, California 95616 • (530) 758-0380
Fax (530) 758-0382 • info@calwild.org

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Mono Lake Committee
Monterey Peninsula Audubon Society
Mountain Lion Foundation
Mt. Shasta Area Audubon Society
Native Species for Habitat
Natural Resources Defense Council
NCRCC Sierra Club
Nordic Voice
Northcoast Environmental Center
Pasadena Audubon Society
Peak Adventures
People for Nipomo Dunes Nat. Seashore
Peppermint Alert
Placer County Conservation Task Force
Planning and Conservation League
Portervile Area Environmental Council
Range of Light Group, Toiyabe Ch., Sierra Club
Redwood Chapter, Sierra Club
Redwood Coast Law Center
The Red Mountain Association
The Rural Institute
Sacramento River Preservation Trust
San Diego Chapter, Sierra Club
San Fernando Valley Audubon Society
Save Our Ancient Forest Ecology
Sea and Sage Audubon Society
Seven Generations Land Trust
Sierra Club Legal Defense Fund
Sierra Nevada Alliance
Sierra Treks
South Fork Mountain Defense
South Fork Watershed Association
South Yuba River Citizen League
Tulare County Audubon Society
Tule River Conservancy
U.C. Davis Environmental Law Society

January 29, 1998

Commanding Officer
Attn: Mr. Surinder Sikand
Environmental Planning Branch, Code 70311
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Dear Mr. Sikand:

In adding ninety-two new, and louder, aircraft to the numerous jets that already fly over Joshua Tree and Sequoia-Kings Canyon national parks on a daily basis, it is important that you recognize, examine and mitigate the problems with the overflights that are currently occurring. Such problems include the disruption of the natural quiet in these areas, creating sudden, loud noises that startle hikers, climbers, and equestrians. 18-A

Another potential hazard has been low-flying military jets being involved in at least two "near-misses" with the search and rescue helicopters of the National Park Service. 18-B An issue that has biologists concerned is the endangered Sierra Nevada bighorn sheep being affected by the low-flying path of the military jets. 18-C

We request that you also analyze how the addition of ninety-two new, louder, jets would intensify the already existing problems with the overflights through the High Sierra. You are required by law (the National Environmental Policy Act) to analyze the consequences that might result in the proposed addition of ninety-two jets, as well as contemplate ways to reduce the effects. 18-D The High Sierra Hikers Association (HSHA) has suggested that you fly the jets over the less populated areas of the Kern Plateau, and/or fly the jets at higher elevations over the wilderness areas and High Sierra parks.

It is important you explore ways to reduce the existing problems, or at least ensure that the current problems associated with overflights are not worsened. 18-E

Sincerely,

Wendy Riddle

Wendy Riddle
Conservation Intern

- Letter 18 –
California Wilderness Coalition
Response to Comments

18-A Evaluation of the potential effects of overflight of Joshua Tree, Sequoia, and Kings Canyon national parks has been added to sections 3.1 and 4.1, Land Use and Airspace, and sections 3.7 and 4.7, Noise, of the EIS.

See the responses to comments 2-C, 2-E, and 2-F for discussion of noise effects in these areas.

18-B Please see the response to comment 2-D regarding low-flying aircraft and the response to comment 2-E for discussion of the "near-miss" with the National Park Service helicopter.

18-C Please see the response to comment 3-B for a discussion of the California bighorn sheep.

18-D Additional discussion of low-level flights over parks and wilderness areas has been added to sections 3.1, 3.7, 4.1, and 4.7 of the final EIS. The FAA establishes flight corridors that military aircraft can use for travel between military bases and training range areas. Flight restrictions and procedures within the R-2508 Complex are established by the CCB and the FAA. Please see the response to comments 2-C, 2-D, 2-E, and 2-F for additional discussion of noise and wilderness areas and the response to comment 2-M for a discussion of measures suggested to reduce existing or potential effects from aircraft overflight of sensitive land uses.

18-E Although control of the airspace above Joshua Tree, Sequoia, and Kings Canyon national parks is not under the authority of the Navy, the Navy is pursuing several approaches to alleviate concerns with regard to aircraft overflights. Please see the response to comment 2-D.

Letter 19

THE WILDERNESS SOCIETY

CALIFORNIA/NEVADA REGIONAL OFFICE

January 26, 1998

Commanding Officer
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006
Attn: Mr. Surinder Sikand, Environmental Planning Branch, Code 70311

RE: Draft Environmental Impact Statement (DEIS) for proposal to station F/A-18 Aircraft on the West Coast.

Dear Commanding Officer:

Please consider this letter our comments on the pending DEIS. We would like to be included on your mailing list for any notices, proposals, publications, and decisions related to Naval aircraft use in the airspace above federally owned lands in California and Nevada, especially over units of the national park system, the National Wilderness Preservation System, lands managed as Wilderness Study Areas by the Bureau of Land Management, units of the National Wildlife Refuge System, and roadless areas of the national forests managed by the U.S. Forest Service. 19-A

Given our experience in both national park and wilderness units within California where low-flying military aircraft have startled us while rock climbing, disturbed us while enjoying the quiet and solitude, and disrupted wildlife we have been observing, we are very concerned about the potential for increased flights of louder aircraft over these areas.

The Wilderness Society recognizes the needs of the U.S. military for training, and we believe those needs can be met while meeting the equally important need to provide regions within America where quiet and solitude prevail, where American's can rekindle their spirit, and where our nation's wildlife can live undisturbed. To do that, it is essential for decisions related to the stationing and operation of military aircraft to recognize the conflicts between certain types of training flights and the purposes and values of our national lands.

PRESIDIO BUILDING 1016, PO BOX 29241, SAN FRANCISCO, CALIFORNIA 94129-0241
(415) 561-6641

Of specific concern at this time is the potential for increasing the impact to Sequoia and Kings Canyon
National Parks, the John Muir Wilderness, and other areas of the High Sierra from additional flights of louder aircraft that might result from the stationing of as many as 92 new F/A-18 aircraft at Lemoore Naval Air Station. Those areas already experience impacts from numerous military flights: they shatter the natural quiet in these areas on a daily basis, and have been responsible for complaints (and even injuries) when hikers, climbers, and equestrians have been startled by the sudden, loud noise. There have also been at least two "near-misses" in recent years between low-flying military jets and the National Park Service's search & rescue helicopters. And biologists are concerned that the noise from low-level military jets is adversely affecting the severely endangered Sierra Nevada bighorn sheep. 19-B

Unfortunately, the DEIS needs to be withdrawn or a supplemental document prepared so that the existence of these problems can be recognized and taken into consideration. The new document should also analyze what the increased impacts to these areas would be from the stationing of 92 additional aircraft at Lemoore.

Rather than ignoring these issues, the DEIS should have discussed them and evaluated alternatives, as suggested by comments of the public and the National Park Service during the development of the DEIS. 19-C
The Navy needs to consider what measures it could adopt to remedy the existing problems and to ensure the current problems are not aggravated by the stationing of additional planes at Lemoore. 19-D

Please include us in all future mailings and notifications related to this proposal. We look forward to working with you to find a solution to these issues.

Sincerely,

Norbert Riedy
Conservation Director

cc: Senator Barbara Boxer
Senator Dianne Feinstein
Sequoia/Kings Canyon National Park
Vice Admiral Brent M. Bennett

- Letter 19 –
The Wilderness Society
Response to Comments

19-A The Wilderness Society has been included in the mailing list for the final EIS and will be considered in any future actions that may arise that potentially affect sensitive land uses.

19-B Additional discussion of low-level flights over parks and wilderness areas has been added to sections 3.1, 3.7, 4.1, and 4.7 of the final EIS. Please see the response to comment 2-F for a discussion of noise and wilderness areas, the response to comment 2-E regarding safety concerns and the "near-miss" with the National Park Service helicopter, and the response to comment 3-B for a discussion of the California bighorn sheep.

19-C The draft EIS provided estimates of peak overflight noise levels at various distances from the flight path of F/A-18E/F aircraft operating at various power settings (see Table 4-26 of the draft EIS). The final EIS provides additional information, including revised flyover event noise analyses based on the latest noise information of F/A-18E/F and F/A-18C/D aircraft. Additional discussion of low-level flights over parks and wilderness areas has been added to sections 3.1, 3.7, 4.1, and 4.7 of the final EIS.

19-D Please see the response to comment 2-M for a discussion of changes to flight operations suggested by the National Park Service and other commentors that were considered by the Navy but are not feasible to implement. See also the response to comment 2-J for a discussion of Navy measures to alleviate noise concerns in national parks and wilderness areas.



Tulare County Audubon Society

P.O. Box 4402
Visalia, CA 93278-4402

In the Heart of the San Joaquin Valley and
Gate to Sequoia and Kings Canyon National Parks

Letter 20

January 17, 1998

Commanding Officer
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006.
Attn: Mr. Surinder Sikand, Environmental Planning Branch, Code 70311

Dear Mr. Sikand:

Tulare County Audubon Society (a chapter of National Audubon which has 380 members in Tulare County) is concerned about the lack of mention in the Draft EIS of the current noise impacts of military flights over Sierra Nevada wilderness in Sequoia and Kings Canyon National Parks and the surrounding national forest lands. As wilderness users, we find current levels of military jet noise over Sierra Nevada wilderness unacceptable. We understand that the military has a self-imposed flight level restriction of 3,000 feet AGL, but even at 3,000 feet one hears a jet for 1-2 minutes before the sound dies away, and the flights over these areas are dozens per day. The draft EIS states that a "less than significant noise impact would result from increased aircraft operations at NAS Lemoore" and that "off-base land uses generally would not be exposed to incompatible noise levels". The document appears not to consider that "off-base land uses" include for many people a long-awaited wilderness vacation far away from the noise and stresses of civilization. Few wilderness users would find jets roaring overhead compatible with their wilderness experience, nor would they agree that more flights would add a "less than significant impact".

20-A

20-B

America was the first country in the world to have designated wilderness. It is something we should be proud of and should fight hard to preserve. Solitude is one of the defining characteristics of wilderness. Military pilots can still practice low level flight without flying over wilderness. We would like to request that the final EIS accounts for the potential increased noise impacts on these very popular wilderness areas, and that the Navy raise its minimum allowable flight levels over wilderness to 10,000 feet above ground level.

20-C

Thank you for the opportunity to comment.

Sincerely,

Linda Mutch

Linda Mutch
Tulare Tappings Newsletter Editor

- Letter 20 –
Tulare County Audubon Society
Response to Comments

20-A Additional discussion of low-level flights over parks and wilderness areas has been added to sections 3.1, 3.7, 4.1, and 4.7 of the final EIS.

20-B The final EIS provides additional discussion of existing and future flyover events in sections 3.1, 3.7, 4.1, and 4.7. Also see the response comment 2-M regarding measures that have been suggested to address overflight concerns.

20-C Please see the response to comment 2-M for a discussion of raising the minimum flight level over national parks and wilderness areas.



The Commanding Officer
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Attention: Mr. Surinder Sikand, Environmental Planning Branch, Code 70311

RE: Draft Environmental Impact Statement (DEIS) for the location of F/A-18E/F on the West Coast

Commanding Officer: January 23, 1998

Desert Survivors is an Interested Party in regard to your proposal to locate F/A-18E/F aircraft on the West Coast of the United States of America. Desert Survivors submits this comment on the Draft Environmental Impact Statement (DEIS) on behalf of its membership. Desert Survivors is a desert conservation organization based in Oakland, California. Our criticisms follow.

1. The scope of the environmental review is too narrow. On page 1 of the Executive Summary (p. ES-1), it is stated: "This environmental impact statement (EIS) evaluates the environmental impacts from developing facilities to support F/A-18E/F aircraft, military personnel, and family members at a naval air station on the West Coast of the United States of America". This the DEIS does not do. No attention is paid to effects of the development beyond the meager confines of the two fields chosen as possible take-off and landing sites.

The scope of this document must be broadened to include the effects of the aircraft themselves on the entire surrounding area, i.e. everywhere that the airplanes are allowed to fly. The activities of pilots in flying the aircraft, authorized or unauthorized, must also be evaluated. What happens in the immediate vicinity of the take-off and landing zones is of importance only to those who live in the area. The effects of the aircraft on users of our public lands and National Parks, and on the taxpayers in general, are of interest to all Americans. These aircraft have far-reaching effects on any environment they are allowed to, or able to, fly in. 21-A

There is a long list of National Parks, State Parks, State and National Wildlife Refuges, and State and National Wilderness Areas and Wilderness Study Areas within a 400-mile radius of either facility. Safety and health effects, as well as cultural, noise and biological impacts on these areas and their visitors should be taken into account.

Here is a partial list: Governed by the National Park Service are Yosemite National Park, Kings Canyon-Sequoia National Park, the Mojave National Preserve, Death Valley National Park, and Joshua Tree National Park.

Governed by the State of California are Anza-Borrego Desert State Park, Salton Sea State Recreation Area, and the Mount San Jacinto State Wilderness, and others.

Governed by the U.S. Forest Service are the Ventana Wilderness, Dick Smith Wilderness, San Gorgonio Wilderness, Golden Trout Wilderness, Santa Lucia Wilderness, Machesna Mountains Wilderness, San Rafael Wilderness, Domeland Wilderness, South Sierra Wilderness, Kaiser Wilderness, Ansel Adams Wilderness, John Muir Wilderness, Dinkey Lakes Wilderness, Monarch Wilderness, Jennie Lakes Wilderness, Santa Rosa Wilderness, San Mateo Canyon Wilderness, Aqua Tibia Wilderness, and San Jacinto Wilderness, and others.

Governed by the U.S. Fish & Wildlife Service are the Imperial National Wildlife Refuge and the Salton Sea National Wildlife Refuge in California and the Kofa Game Range and the Cabeza Prieta Wildlife Refuge in Arizona. 21-A

Governed by the Bureau of Land Management are the Caliente Mountain Wilderness Study Area, Inyo Mountains Wilderness, Malpais Mesa Wilderness, North Algodones Dunes Wilderness, Carrizo Gorge Wilderness, Jacumba Wilderness, Orocopia Wilderness, Mecca Hills Wilderness, Chuckwalla Mountains Wilderness, Little Chuckwalla Mountains Wilderness, Palo Verde Mountains Wilderness, Indian Pass Wilderness, Palen/McCoy Wilderness, Cleghorn Lakes Wilderness, Sheephole Wilderness, Whipple Mountains Wilderness, Turtle Mountains Wilderness, Stepladder Mountains Wilderness, Old Woman Mountains Wilderness, Bighorn Mountains Wilderness, and many others.

The effects on all publicly-owned lands over which these aircraft may fly should be considered in an expanded EIS.

2. Several statements appearing in the DEIS are incorrect. On page ES-8, in the sixth paragraph it is stated that: "No significant impacts relating to .... compatibility with regional land uses, or airspace operations would occur at NAS Lemoore or NAF El Centro." Military aircraft flying over National Parks, National Wildlife Refuges, State Parks, State Wildlife Refuges and National or State Wilderness Areas are incompatible with the uses for which these public spaces have been established. Military aircraft are alien to the natural environment, and their imposition on our public lands and public lands users should not be allowed to occur. 21-B

3. On page ES-8, in the seventh paragraph it is stated that: "No significant impacts to visual resources are expected from developing facilities to support basing the F/A-18E/F aircraft at NAS Lemoore or NAF El Centro." The DEIS is remiss in not evaluating potential and real effects on aesthetic resources on the public lands over which these aircraft may fly. Not only visual, but also auditory, olfactory, and kinetic effects have been observed and can be expected when such aircraft fly over. There is also a spiritual and intellectual appreciation of the natural resource lands referred to above that is blunted, interfered with, or damaged when the planes fly over. These effects of the flights on Aesthetics Resources must be evaluated in an expanded EIS. 21-C

4. On page ES-9, it is stated that "No significant impacts to population, environmental justice, employment, income, housing, sales volume, net government revenues, or recreational and community facilities would result from implementation of the proposed project at NAS Lemoore or NAF El Centro." This statement is incorrect. The DEIS does not take into account the opportunity cost of the project.

By "opportunity cost" is meant what other benefits could be enjoyed with the money that is being spent on the project. Obviously, the money to be spent on such a large project as this would have significant effects on all of the aspects of human life referred to in the statement. Employment would be different if, for example, hospitals or schools were kept open instead of military bases. Income would be distributed differently if the government invested in parks or productive enterprises instead of yet another military base. More housing could be built for homeless persons if the military construction were foregone. The analysis of this in the draft is meager. 21-D

5. Under "Cultural Resources" on page ES-9, it is stated that: "No significant impacts to cultural resources would occur at NAS Lemoore or NAF El Centro as a result of the proposed project." This statement is misleading. There are significant cultural values on all of our public lands to be affected by overflights emanating form these bases. It is not culturally pleasant, nor is it a cultural benefit, to hear or see a military aircraft roaring overhead when one is exercising one's cultural prerogative to enjoy nature. Nor is it a benefit to hear or see a military aircraft roaring overhead when one is engaging in a quest for spiritual renewal in such places. The DEIS does not take into account these cultural factors. 21-E

6. On page ES-10 under "Noise", the expected increase in noise levels in our National Parks and public resource lands is not referred to. Furthermore, no attempt is made in the main body of the document to analyze this. Are these aircraft expected to be silent? I have personally observed on may occasions that noise levels are increased when these airplanes fly over our public lands. Whether they fly low or high, the noise is annoying, and at times deafening. Since there is an incompatibility between an industrial use like military overflights and the spiritual-cultural-intellectual-educational uses to which these lands are put by the public, your criterion for noise recorded on our Parks, Refuges and Wilderness Areas should be 0 decibels. The actual decibel level over these non-base lands is not analyzed. 21-F

7. On page ES-10 under "Biological Resources", it is stated that: "No significant impacts to jurisdictional wetlands, vegetation and wildlife, birds protected by the Migratory Bird Treaty Act, or existing plans and policies would occur from implementation of the proposed action at NAS Lemoore or NAF El Centro." Impacts are not analyzed for effects on biological resources located on other lands used by the aircraft. This is a glaring error. Impacts on bighorn sheep and other ungulates, migratory birds, and other animals are not dealt with in the present DEIS. These effects should be studied and the DEIS should be modified accordingly. 21-G

8. On page ES-11, a laundry list of utilities and services subject to impact is given and it is declared that there will be "no significant impacts". In the body of the DEIS, there is no analysis of the opportunity cost of the project. The money spent on this project would buy a great deal of service and utility in "water supply, child care services, health services or fire protection", etc. This fact has been a major impetus behind our current base closure efforts. The DEIS should be modified to take possible benefits of NOT basing the airplanes into account. These benefits should be quantified. 21-H

9. Also on page ES-11, it is alleged that there will be no significant impacts on public safety and health . Not analyzed are threats to the health and safety of individuals using the public lands over which the aircraft are expected to fly. There have been instances in which users of public land have been injured by shrapnel from bombs. Unexploded ordnance litters much of our public lands, not just on bombing ranges, but on wildlife refuges and on other resource lands. 21-I

In addition, in 1994 the California Desert Protection Act formally allowed the Navy to use the Chocolate Mountains Bombing Range for 20 years, after which use reverts back to the public. There is no impact analysis of the siting of these aircraft at NAS Lemoore or NAF El Centro on the use of this bombing range and its inevitable reversion to public use. Another possible bombing range that may be used is the Barry M. Goldwater Range in Arizona. The project's possible effect on this land and its wildlife and human use are not analyzed. Portions of the Nellis Air Force Base in Nevada may be used. Impacts on this land are likewise not analyzed. Impacts on all lands to be used by these aircraft should become part of an expanded DEIS. 21-J

11. Ditto under "Hazardous Materials and Waste" on page ES-11. It is expected that there will be impacts from fuel spills, radioactive weaponry (e.g. depleted uranium), microwave, and other hazards from the deployment. Hazards should be analyzed with respect to any and all public lands that the aircraft fly over. Crashes of these aircraft happen all the time, on average of one per week. Analysis of where these crashes might occur and who may be effected need to be evaluated. The effects of the public's enjoyment of our American public lands, including all hazards and the possibility of closure, either temporary or permanent, must be part of the analysis. 21-K

12. Nowhere in the document is the purported utility of the "enhanced strike fighter capability" of the F/A-18E/F aircraft analyzed. The necessity for the development of such aircraft is simply accepted as a given. The public needs to know how these aircraft are better than those they replace and the full cost of replacing them. The place of expenditure for these aircraft in the U.S. National Budget is not analyzed, nor is effect of expenditure for these aircraft and their deployment on the National Debt. The taxpayers have not been fully informed of these factors. We have seen in the past a tremendous waste of money on weapons systems such as these aircraft, for no discernible result. The extra maneuverability or 5 or 10 or 15 mph increase in flight speed is not necessarily worth the investment, either in the airplanes themselves or in the personnel or facilities to support them. These impacts (including cumulative) on our National Budget and National Debt must be analyzed in an expanded DEIS. 21-L

13. A further consideration not referred to in the DEIS is the propensity of military pilots to misuse the privilege they are given to fly over public lands. Frequently pilots are flying low over these lands, using them gratuitously in an irresponsible manner. I have observed them doing loop-de-loops, somersaults and dangerous close-to-the-ground maneuvers that are likely to result in a crash and a loss of life and/or property. Conversations with officials of Parks and Bases have convinced me that commanding officers are either unable or unwilling to discipline fliers for their transgressions, even when they are disobeying direct orders. I have often observed jets "buzzing" Park or Wilderness visitors, most notably at hot springs where naked women are present or at long-term camping areas, to show off their "abilities". The increased usage of our public lands by jets is likely to increase these types of violations. 21-M

The DEIS must address these concerns, specifically on how to keep fliers above the 3000 foot minimum above Parks and public lands, and on how fliers are going to be punished, suspended, or thrown out of military service if they cannot obey the rules. The DEIS should also address how base commanders are going to be held to strict disciplinary procedures over their fliers and on how the 3000 foot standard and acceptable noise and visual impact standards are to be enforced, on both fliers and commanders. The public does not want to observe and hear jets flying across Parks and Wilderness. The EIS should analyze how these impacts are going to prevented.

14. There is no analysis presented on exactly where the aircraft will be allowed to fly. Precise corridors of flight that avoid any visual and auditory impacts on Parks, Refuges and Wildernesses must be presented in the expanded EIS. Maps of permitted and allowable flight occurrences and volumes over time should be included. The cumulative effect of impacts from these flights on public lands should also be detailed. Fliers and base commanders should not be encouraged to range will-nilly over entire blocks of public land. Not only is this wasteful of fuel, it is an annoyance to the hard-working American in search of leisure and to the hard-working American taxpayer alike. Currently, there is no attempt to curtail flights and therefore the costs of the flight program. These costs are not analyzed in the DEIS, but they should be. 21-N

15. I will remind you that the National Environmental Policy Act (NEPA) requires an agency to "...identify and develop methods and procedures ... which will insure that presently unqualified environmental amenities and values may be given appropriate consideration in decision-making". NEPA also requires the Navy to "consult with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved". 21-O

The DEIS is insufficient in giving consideration to environmental amenities and values. And there is no indication presented that that the Navy consulted with the National Park Service, the U.S. Forest Service, the U.S. Fish & Wildlife Service, the Bureau of Land Management, or California State Dept. of Natural Resources or Dept. of Fish and Game on any of the topics I've raised concerning lands away from the bases. On both of these NEPA proscriptions, the DEIS is inadequate and in violation of the law, and therefore must be modified to come into compliance with NEPA. 21-P

16. Finally, on page ES-6 the Navy has eliminated consideration of the No Action alternative. This is illegal. Obviously, No Action is an option when considering any public project. The benefits and detriments of basing the aircraft anywhere should be considered, and the benefits and/or detriments of the No Action alternative should be part of the analysis. If the American people in their wisdom can find no benefit to basing the aircraft anywhere, then they shouldn't be based anywhere, they should be scrapped. Without any analysis, how can we determine that? The DEIS is in violation of NEPA due to this omission. You have deprived Desert Survivors and the American public of their option to choose the NO Action alternative. 21-Q

On the basis of the information presented in your incomplete DEIS, Desert Survivors would choose the No Action alternative. We would like the DEIS to be modified so that we may have more choices, not less. 21-R

Thank you for the opportunity to review the Draft Environmental Impact Statement (DEIS) for the location of F/A-18E/F on the West Coast. Desert Survivors fully expects that the scope of the document will be expanded and that our concerns will be respected and analyzed properly in a new EIS. Desert Survivors would like to be notified about any and all developments as an Interested Party in this expanded military operations proposal. Our address and phone are below.

Sincerely,

Steve Tabor

(510) 769-1706

Steve Tabor, President
Desert Survivors
P.O. Box 20991
Oakland, CA 94620-0991

- Letter 21 –
Desert Survivors
Response to Comments

21-A The proposed action discussed in the final EIS is the development of facilities to support the F/A-18E/F aircraft. There is no development proposed beyond the area of the basing installation. No new ranges or airspace are proposed as part of the action. Use of existing ranges and airspace would be expected to continue in a manner compatible with the current designated use (see added discussion in Section 4.1, Land Use and Airspace). The F/A-18E/F aircraft would not affect most of the parks and wilderness areas listed. Aircraft over certain portions of those national parks and wilderness areas within R-2508 would be subject to the 3,000-foot AGL restrictions specified in the *R-2508 User's Handbook* (See figure 3-2 in the final EIS). Please see the text added to Section 3.1 for a detailed discussion of altitude restrictions. Please see the response to comment 2-E regarding safety concerns, the response to comments 2-C and 2-F regarding noise effects on sensitive land uses, and the response to comments 3-A, 3-B and 3-C for discussion of biological resource issues. Additional analysis of potential noise effects of the proposed action have been added to sections 3.7 and 4.7, Noise, of the EIS. Potential effects on cultural resources is presented in sections 3.4 and 4.4, Cultural Resources, of the EIS.

21-B The proposed action would not significantly change existing airspace utilization around either of the alternative bases or in any of the training areas that would be used by F/A-18E/F aircraft. No parks, wildlife refuges, or wilderness areas underlying affected airspace have been forced to close or abandon their primary uses as a result of existing aircraft overflights, and none are proposing to do so as a result of the proposed action. No information has been provided to indicate any alteration in the primary purposes or uses of public lands underlying airspace that would be used by the F/A-18E/F aircraft.

21-C Aircraft traveling intermittently above national parks and wilderness areas have a brief transition time would not present a significant visual impact. Noise issues associated with aircraft overflights are discussed in Section 4.7 of the final EIS. Aircraft traveling over park and wilderness areas would not produce measurable change in ambient air quality, and would not produce any noticeable odors.

21-D The discussion of impacts to population, environmental justice, employment, income, housing, sales volume, net government revenues, and recreational and community facilities in Section 4.3 of the final EIS indicates that the effect of the proposed action would be neutral or positive in all cases. The analysis in Chapter 4 concludes that the benefit/cost indicators would be favorable. No hospitals or schools would close as a result of the proposed action. Please see also Appendix B for a listing of socioeconomic indicators used to perform the analysis.

21-E Aircraft operations are conducted in areas specifically designated for military training purposes. Flight altitude restrictions are imposed over specific sensitive resource areas. Noise issues associated with aircraft overflights are discussed in Section 4.7 of the final EIS. Please see sections 3.4 and 4.4 of the EIS and Appendix C for a detailed discussion of cultural resources.

21-F The draft EIS provided estimates of peak overflight noise levels at various distances from the flight path of F/A-18E/F aircraft operating at various power settings (see Table 4-26 of the draft EIS). The final EIS provides additional information, including revised flyover event noise analyses based on the latest noise information of F/A-18E/F and F/A-18C/D aircraft. Additional discussion of

low-level flights over parks and wilderness areas has been added to sections 3.1, 3.7, 4.1, and 4.7 of the final EIS.

21-G The areas that would be developed as part of the F/A-18E/F siting have been analyzed for these issues. The only other land that would be used by the aircraft are designated military test and training ranges. Such areas are permitted for use, and no changes are proposed as part of this action. Documentation of biological resources would be conducted by the Department of Defense entity with authority for these areas. Discussion of potential effects on biological resources not in the areas proposed for development has been added in Section 4.8, Biological Resources. Please see also the response to comments 3-A, 3-B, 3-C, and 3-D. Potential impacts on migratory birds and other animals also are discussed in Section 4.8 of the final EIS.

21-H The decision to purchase the F/A-18E/F aircraft was made by Congress. The EIS evaluates the impacts of developing the facilities to support basing the aircraft at either NAS Lemoore or NAF El Centro. Based on discussions with utility providers, it has been determined that the project would have no significant impact on utilities and services.

21-I Unexploded ordnance would fall under the jurisdiction of specific military ranges where public access is restricted. Potential explosion of ordnance away from designated military ranges is an unplanned event that is not within the reasonable scope of environmental review.

21-J All of the training ranges are designated for such uses and would be used by the F/A-18E/F aircraft. Potential impacts are analyzed in the relevant sections of the final EIS. The Barry M. Goldwater Range (W291/R-2301) is identified in Table 2-8 as a training range that would be used by aircraft from NAF El Centro.

21-K Hazardous materials are examined in sections 3.12 and 4.12 of the final EIS. Crashes are most likely during takeoff and landing, and therefore these risks are evaluated in Section 4.1 under the discussion of APZs. Public health and safety issues are discussed in Section 4.11 of the final EIS.

21-L Please see sections 1.1 and 1.2 for a discussion of the purpose and need for the proposed action. The decision to purchase the improved F/A-18E/F aircraft was made by Congress. The purpose of the EIS is to evaluate the impacts of development of facilities in support of the F/A-18E/F aircraft.

21-M Military flights within the R-2508 Complex are required to observe the 3,000-foot AGL restriction over Sequoia and Kings Canyon national parks, the portion of the John Muir wilderness within the boundaries of Sequoia and Kings Canyon national parks, the 1977 boundaries of the former Death Valley National Monument, and the 1977 boundaries the Domeland Wilderness Area. (Figure 3-2 in the EIS). If Navy pilots violate the altitude restrictions, appropriate disciplinary measures are taken. However, the 3,000-foot AGL restriction applies only to specific sensitive resource areas within the R-2508 Complex. Low-level flight is permitted within most portions of the R-2508 Complex. Please see the response to comment 2-D for a discussion of areas subject to the 3,000 feet AGL restrictions and measures to curtail violations.

21-N Major training areas that would be used by the F/A-18E/F aircraft were identified in tables 2-4 and 2-8 of the draft EIS. The appropriate MTRs and military operation areas that would be used by the F/A-18E/F aircraft are further identified in the final EIS. These airspace areas are designated for such uses by the Department of Defense and the FAA. To the degree the Navy can, it flies to

avoid impacts to sensitive resources. All flights are training flights and follow a strict training syllabus that considers fuel consumption.

21-O A notice of scoping was sent to all interested parties. Announcements appeared in newspapers for all affected areas, and scoping meetings were conducted on April 28 and 29, 1997. The final EIS is prepared in compliance with NEPA and CEQ regulations.

Please see Chapter 8 of the EIS for a listing of agencies that have jurisdiction or special expertise and that were consulted during preparation of the EIS. A meeting was held with the National Park Service and a representative from Department of Interior to solicit concerns for inclusion in the final EIS.

21-P Please refer to Chapter 10.0, Distribution List, for a listing of all agencies, organizations, and individuals who were mailed a copy of the draft EIS.

21-Q For purpose of impact analysis in Chapter 4, baseline conditions, which normally would be represented by the No Action Alternative, were considered for each station and were compared to conditions under the proposed action. Text describing the No Action Alternative in Section 2.3.3 has been revised to clarify this issue.

21-R Please see Section 2.4 for a discussion of alternatives. The aircraft must be stationed on the West Coast, as stated, and no other facilities meet the selection criteria for further analysis.

Letter 22



HIGH SIERRA HIKERS ASSOCIATION

PO BOX 8920 SO. LAKE TAHOE CA 96158

January 21, 1998

Surinder Sikand, Code 18511
U.S. Navy - Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Dear Mr. Sikand:

The High Sierra Hikers Association (HSHA) is a nonprofit organization that represents hundreds of citizens from throughout the United States who recreate in California's High Sierra. This letter transmits the comments of the HSHA regarding the Draft Environmental Impact Statement for Development of Facilities to Support the West Coast Basing of the F/A-18E/F Aircraft ("DEIS").

We originally sent written comments (dated May 20, 1997) during the scoping period for this project. Those comments (copy enclosed) asked that the Navy address the existing and potential impacts of military flights over national parks and wilderness areas of the High Sierra. Despite our scoping comments, not only does the DEIS fail to evaluate those issues, but we were not notified of, or invited to, a so-called "public hearing" regarding this proposal, nor were we sent a copy of the DEIS until we specifically requested one after learning of its availability from local citizens who were tracking this issue. We would appreciate an explanation as to why a sizable nonprofit citizens' group such as the HSHA—a group that clearly expressed its interest and concerns in writing during the public scoping period—was not sent a copy of the DEIS or notified of the public hearing. We believe that the public record for the hearing is fatally flawed because citizens who had expressed a keen interest in this proposal were not notified of (or invited to) the hearing. Members of the HSHA would surely have attended the public hearing and submitted comments into the record had we been provided ample notice. 22-A

Regarding the DEIS itself, the document is woefully inadequate and legally deficient because: (1) it fails to acknowledge impacts currently caused by overflights of national parks and wilderness areas by military aircraft; (2) it fails to evaluate and disclose the adverse impacts on California's national parks and wilderness areas that would result due to increasing the number of military jets stationed at Lemoore NAS and/or El Centro NAS as proposed; and (3) it fails to consider reasonable mitigation measures that could reduce or avoid the adverse impacts of increasing the number of military jets assigned to the naval bases at Lemoore and/or El Centro. 22-B

The adverse impacts of the current level of military overflights of the Sierra Nevada mountain range are many. Numerous members of the HSHA (and other citizens) who recreate in High Sierra national parks and wilderness areas are frequently exposed to excessive noise from military overflights. Such noise seriously degrades the natural quiet. Make no mistake: the natural quiet is a critically important (and threatened) natural resource—a resource found almost exclusively in a remaining few supposedly protected national parks and wilderness areas. Our members and others value greatly the quietude found in these areas, and the resource of quiet is a major reason why many of us visit High Sierra parks and wilderness areas. We are extremely concerned that the natural quiet of these areas is already being seriously degraded on a daily basis by military overflights, and that the Navy now proposes to increase its F-18 fleet by 92 jets without acknowledging existing problems or evaluating potential measures to mitigate the impacts that will surely result from expanding military flights over the High Sierra. 22-C

A fundamental fact that needs to be acknowledged by your agency is that the noise generated by the present level of military activity over the High Sierra needs to be **reduced**, not increased. A substantial portion of the current problems arise due to the fact that Navy pilots frequently violate the "advisory" that aircraft remain at least 2,000 - 3,000 feet "above ground level" (AGL) over High Sierra parks and wilderness areas. Such ongoing violations by Navy pilots result in several types of acute problems. For example, park and forest managers in the southern Sierra have received numerous complaints about safety problems resulting from low-flying military aircraft. One woman reportedly complained that her daughter nearly fell off the summit of Mt. Whitney after being startled by a low-flying military jet. An equestrian riding in the Golden Trout Wilderness just south of Sequoia National Park was seriously injured after being thrown from a horse that was "spooked" by a low-flying military jet. And the pilots of National Park Service (NPS) search and rescue helicopters have for years complained about the safety hazards posed by the constant low-flying military jets over Sequoia and Kings Canyon National Parks (SEKI). One veteran NPS pilot even quit after a "near miss" incident with a low-flying military jet at SEKI. These are just a few examples of the incidents that have occurred due to the persistent low-flying military aircraft over parks and wilderness areas of the High Sierra. There have been many other such incidents, and your staff should consult with the National Park Service and U.S. Forest Service to evaluate and eliminate these ongoing problems. 22-D

We are also very concerned about the potential impacts of low-flying military aircraft on endemic wildlife of the Sierra Nevada. For example, large mammals such as bighorn sheep are known to be sensitive to noise generated by aircraft overflights (see, for example, Geist 1978, Knight and Cole 1995, MacArthur and others 1982). Careful evaluation of the impacts of military overflights on the Sierra Nevada bighorn sheep is especially vital since this declining population is currently threatened with extinction, and should not be exposed to any additional human-induced stressors. 22-E

In summary, the aesthetic, biological, and safety issues caused by low-level military overflights need to be acknowledged and evaluated, and the potential for the proposed increase in the Navy's F-18 fleet to exacerbate these problems needs to be carefully analyzed and disclosed (in order to comply with the National Environmental Policy Act), and mitigated (in order to comply with the Wilderness Act). 22-F

A separate key issue is that, while the low-flying jets cause the most "acute" problems, Navy jets constantly "crisscross" the High Sierra on their way between Lemoore NAS and training ranges in the California desert and in Nevada. Even when these jets comply with the current AGL advisories, the natural quiet of Sierra parks and wildernesses is significantly degraded by the constant military

traffic. In other words, while your agency needs to acknowledge the acute problems caused by frequent violations of AGL advisories by Navy pilots, it is also critical to acknowledge that the current AGL advisories are not sufficient to protect the natural quiet in Sierra parks and wilderness areas, and that the proposed increase in the Navy's F-18 fleet at Lemoore NAS is therefore likely to cause a significant cumulative effect on the environment of Sierra parks and wilderness areas. The cumulative effects of noise that would be generated by the proposed addition of 92 jets to the fleet at Lemoore NAS must be fully (i.e., quantitatively) evaluated in your EIS. 22-G

Another key deficiency of the DEIS is that it fails to evaluate reasonable mitigation measures for minimizing or avoiding significant impacts on High Sierra parks and wilderness areas. Mitigation measures that should be evaluated include: (1) requiring Navy pilots to maintain higher elevations (such as 20,000 feet or more) whenever crossing the Sierra Nevada, and (2) requiring Navy pilots to avoid flying over popular national parks and wilderness areas of the southern Sierra altogether, by crossing the Sierra farther to the south, over already-developed areas, such as along the corridors of highways 58 and/or 178. 22-H

Because the DEIS is deficient in so many respects, as outlined above, and because the HSHA was not notified of the public hearing or provided with a copy of the DEIS in a timely manner, we hereby request that a supplemental DEIS be prepared and circulated for public review before any decision is made regarding this proposal. The supplemental DEIS should evaluate the concerns raised above, and propose mitigation measures and/or modifications to the proposed action as needed to fully mitigate the impacts of military flights over the national parks and wilderness areas of the High Sierra. 22-I

Please provide to us, at the letterhead address, copies of all future environmental and decision documents related to this proposal, and keep us informed of all opportunities for public comment.

Yours sincerely,

Peter Browning

Peter Browning
Coordinator

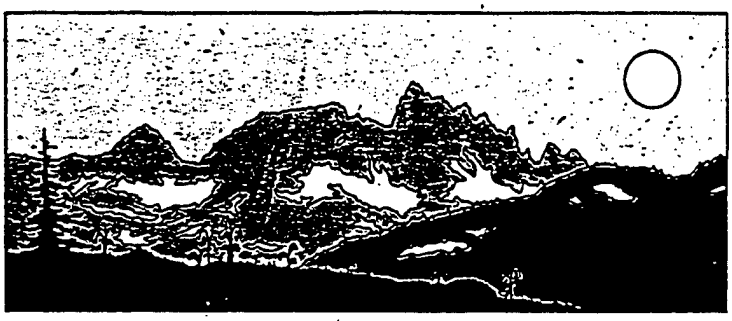
cc: Senator Barbara Boxer, Senator Dianne Feinstein

References

Geist, V. 1978. Behavior. In: *Big Game of North America: Ecology and Management*, eds., J.L. Schmidt and D.L. Gilbert, 283-296. Harrisburg, Pennsylvania: Stackpole Books. 494 pp.

Knight, R.L., and D.N. Cole. 1995. Wildlife responses to recreationists. In: *Wildlife and Recreationists: coexistence through management and research*, eds., R.L. Knight and K.J. Gutzwiller, 51-69. Washington, D.C.: Island Press.

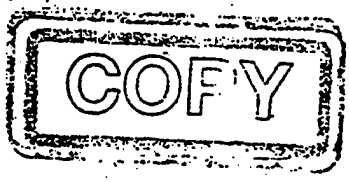
MacArthur, R.A., V. Geist, and R.H. Johnston. 1982. Cardiac and behavioral responses of mountain sheep to human disturbance. *Journal of Wildlife Management* 46:351-358.



HIGH
SIERRA
HIKERS
ASSOCIATION

PO BOX 8920 SO. LAKE TAHOE CA 96158

May 20, 1997



Naval Facilities Engineering Command
Attn: Mr. Surinder Sikand, Code 18511
900 Commodore Drive
San Bruno, CA 94066-5006

Dear Mr. Sikand:

The High Sierra Hikers Association is a nonprofit organization that represents hundreds of citizens throughout the United States who are concerned about military activities in and over the parks and forests of California's Sierra Nevada.

Military overflights daily shatter the natural quiet over much of the High Sierra wilderness. We are very concerned that any expansion at Lemoore NAS would exacerbate this deplorable situation. Your EIS should acknowledge that the "AGL" advisories curently in effect in the Sierra are woefully inadequate to protect the natural quiet, and that existing military training exercises routinely result in violations of AGL advisories. Indeed, even when the existing AGL advisories are followed, military overflights generate very disturbing amonts of noise in the High Sierra.

Military overflights of the Sierra should be decreased, not increased. Since the new F/A-18 fleet would need to cross the Sierra Nevada to reach training ranges in Nevada (if stationed at Lemoore), we oppose siting the new fleet at Lemoore NAS. Your EIS must fully disclose the impacts of overflights on the wilderness areas of the High Sierra.

Sincerely,

Peter Browning
Coordinator

- Letter 22 –
High Sierra Hikers Association
Response to Comments

22-A As noted in the response to comments 2-G and 2-H, efforts were made during the scoping and notification processes to reach all interested parties.

22-B The draft EIS provided estimates of peak overflight noise levels at various distances from the flight path of F/A-18E/F aircraft operating at various power settings (see Table 4-26 of the draft EIS). The final EIS has been revised to include additional discussion and analysis of potential impacts of the proposed action on national parks and wilderness areas. Please see sections 3.1 and 4.1, Land Use and Airspace, and sections 3.7 and 4.7, Noise, of the final EIS. Please see the response to comment 2-M for a discussion of suggested changes in aircraft operations in the vicinity of national parks and wilderness areas.

22-C Please see the response to comment 2-F regarding aircraft noise and wilderness areas and the text added to sections 3.7 and 4.7 of the EIS.

22-D Please refer to Chapter 10.0, Distribution List, for a listing of all agencies, organizations, and individuals who were mailed a copy of the draft EIS or were notified of its availability. Input was solicited from the US Forest Service and the National Park Service. A meeting was held with the National Park Service and a representative from Department of Interior to solicit concerns for inclusion in the final EIS. Meetings between the Navy and the National Park Service are expected to continue to address the issue of low-level flights.

22-E Please see the response to comment 3-B for a discussion of Peninsular and California bighorn sheep.

22-F Please see the response to comment 2-C with regard to noise, the response to comments 3-A, 3-B, and 3-C with regard to biological resources, the response to comment 2-D regarding low-level military flights, and the response to comment 2-E regarding safety concerns.

22-G Please see the response to comments 2-D and 2-J for a discussion of Navy efforts currently underway to address noise concerns. Noise conditions from the proposed action are quantitatively analyzed in Section 4.7 and Appendix F of the EIS.

22-H Please see the response to comment 2-M for a discussion of changes to flights over national parks or wilderness areas.

22-I The draft EIS was available in local public libraries after the notice of availability was published in the Federal Register on December 17, 1997. Public notification was on December 21 and 22, 1997, in the Fresno Bee, the Imperial Valley Press, and the Hanford Sentinel. Public hearings were held on January 7, 1998, in Lemoore and on January 8, 1998, in El Centro. As provided by NEPA, a 45-day public review followed the issuance of the draft EIS to allow for public comments and questions. Because no new significant impacts have been identified in the final EIS, a supplemental draft is not required. All public comments are printed in the final EIS, and the responses to these comments are provided. Additionally, after publication of the final EIS, a 30-day public review follows to allow for additional comments.

Letter 23

Natural Resources Defense Council

71 Stevenson Street
San Francisco, CA 94105
415 777-0220
Fax 415 495-5996

Wednesday, January 28, 1998

Commanding Officer
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno CA 94066-5006

Attn: Mr. Surinder Sikand, Environmental Planning Branch, Code 70311

Re: Draft Environmental Impact Statement /Proposal to Increase the F-18 Fleet at Lemoore Naval Air Station

Dear Commanding Officer:

This letter constitutes the comments of the Natural Resources Defense Council (NRDC), on the above referenced draft environmental impact statement (EIS). NRDC is a non-profit environmental organization with some 400,000 members and contributors nationwide, more than 60,000 of whom live in California. NRDC and its members have long been engaged in efforts to protect America's parks and other federal public lands in California and elsewhere. Our work here in California has included advocacy to protect the unique resources of California's High Sierra from excessive logging and grazing as well as other environmentally damaging activities. We and others regularly receive complaints from members of the public regarding the military flights that occur regularly over Sequoia, Kings Canyon, and Joshua Tree National Parks, the John Muir Wilderness and other sensitive places in this special region. We are disappointed by the draft EIS's treatment of current problems involving overflights of jets now based at Lemoore Naval Air Station as well as its analysis of the impacts of future flights. 23-A

Existing military flights already shatter the natural quiet in the High Sierra on a daily basis, adversely affecting recreationists and others, including National Park visitors. They also adversely affect wildlife, especially Sierra Nevada bighorn, and pose safety risks to other aircraft as well apparently to humans. Yet, the draft EIS fails to recognize these existing problems. Nor does it analyze and disclose the effects that the permanent addition of 92 fighter jets to the fighter fleet at Lemoore Naval Air Station will have on these already existing problems. These and other significant issues were raised by the general public in the scoping process for this EIS – and have simply been ignored by its preparers. 23-B

In addition, the draft fails to include consideration of the *required* "no action" alternative, 40 CFR § 1502.14(d), and reveals that the Navy did not fulfill its "responsibility" to consult with the National Park Service, the federal agency with "jurisdiction by law [and] special expertise on ... environmental issue[s] that should be addressed in" this EIS, Council on Environmental Quality, "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," Question 14a, 46 Fed. Reg. 18026, 18030 (March 23, 1981). Last but not least, the draft EIS does not address measures that could mitigate both present and future flight activities. In short, the draft does not satisfy the Navy's obligations under the National Environmental Policy Act of 1967 (NEPA). 23-C 23-D 23-E

On behalf of our members, NRDC urges you to correct these deficiencies in the draft EIS and, in particular, to mitigate fully the impacts of your proposal on the outstanding natural resources of the affected area. Only with the full analysis of existing and potential problems associated with overflights that NEPA requires will you be able to make an informed decision about increasing the number of fighter jets at Lemoore. Equally importantly, such an analysis is essential to enable you to identify and select mitigation measures that will, at a minimum, ensure that your decision does not exacerbate existing problems. 23-F

We have been informed that the National Park Service has identified significant noise, safety and other impacts in its review of this DEIS and that it has requested that these impacts be mitigated. We specifically endorse their request and urge you to do all you can to ensure that existing overflights as well as future overflights do not harm National Park resources.

Thank you in advance for considering these comments.

Sincerely,

Johanna H. Wald

Johanna H. Wald
Senior Attorney
Director, Land Program

cc: Senator Barbara Boxer, Washington DC
Thomas J. Bohigian, Northern California Director, Office of Senator Boxer

- Letter 23 –
Natural Resources Defense Council
Response to Comments

23-A Please refer to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, for a discussion and analysis of flights over sensitive areas, such as the national parks and wilderness areas mentioned.

23-B The draft EIS provided estimates of peak overflight noise levels at various distances from the flight path of F/A-18E/F aircraft operating at various power settings (see Table 4-26 of the draft EIS). The final EIS provides additional information, including revised flyover event noise analyses based on the latest noise information of F/A-18E/F and F/A-18C/D aircraft. Additional discussion of low-level flights over parks and wilderness areas has been added to sections 3.1, 3.7, 4.1, and 4.7 of the final EIS. Please see the response to comment 2-F for a discussion of noise, the response to comment 3-B for a discussion of the California bighorn sheep, the response to comment 2-E for safety, and the response to comment 2-H regarding scoping issues.

23-C The No Action Alternative is identified in Section 2.3.3 of the final EIS. The No Action Alternative in this EIS establishes a benchmark for describing the incremental impacts of the alternatives.

23-D Agencies consulted during preparation of the EIS are indicated in Chapter 8. In addition, a meeting was held with the National Park Service and a representative from Department of Interior to solicit concerns for inclusion in the final EIS.

23-E See the response to comment 2-M regarding alteration of aircraft flight patterns above national parks, as suggested by other commentors.

23-F Additional analysis of potential impacts from the proposed action has been added to sections 4.1, Land Use and Airspace, and 4.3, Noise, of the final EIS. Please see the response to comment 2-F for a discussion of noise and national parks and wilderness areas. Safety concerns are discussed in the response to comment 2-E.

Letter 24

THE DESERT PROTECTIVE COUNCIL INC.

A NON-PROFIT ORGANIZATION

P.O. BOX 2312 • VALLEY CENTER • CALIFORNIA 92082

DESERT PROTECTIVE COUNCIL
ADVISORY PANEL

SYLVIA BROADBENT
Professor of Archaeology

GEORGE W. COX
Conservation Ecologist

PETE DANGERMOND
Park Consultant

MARY DIEDECKER
Botanist

BETTY FORSEY
Desert Tortoise Advocate

MICHAEL FROME
Author

AUGUST FRUGE
Conservationist

LARRY IVERIS
Wilderness Advocate

WILBUR MATHEW
Professor of Zoology

ART MONTANA
Professor of Earth Sciences

VI MUTH
Lawyer

KAREN SAUSMAN
Buffalo Director

ROBERT STEBBINS
Herpetologist

LEONARD VINCENT
Professor of Biology

FRANK WHEAT
Attorney

HOWARD WILSHIRE
Geologist

COMMENTS ON THE DEIS FOR THE LOCATION OF
F/A 18 AIRCRAFT ON THE WEST COAST.

The Desert Protective Council, a desert-oriented national membership organization, respectfully submits its comments on the above project.

OVERFLIGHTS

The DPC accepts the mission of the military, but, also, supports the laws and regulations which temper unrestricted overflights, be they private, commercial or military.

- Overflightsdestroy silence and quiet. Not only are silence and quiet identified as valuable resources in federal laws such as the Wilderness Act (1964), the Federal Land Policy & Management act (1976), the National Parks Overflight Act (1987) and the California Desert Protection Act (1994), but are recognized as such by the Federal Aviation Administration and the Department of Interior. See attachment A.
- Overflights create many problems, both in the air and on the ground. One example is cited in attachment B. It appears that the U.S. Navy which is proposing this F/A-18 project accepts injuries, damages and non-compliance with military policy at the "apology" level.
  Question: Is this position to be imposed along the route as proposed?
- There is some indication that overflights are currently occuring along the proposed route, prior to the close of the comment perio for the DEIS. 24-A

THE PROPOSED ROUTE IS NOT ACCEPTABLE

- The proposed route (Attachment C) crosses over designated state and federal Wilderness and Wilderness Study Areas, and thru the heart of Joshua Tree National Park and Anza-Borrego Desert State Park. It invades the ranges of bighorn sheep including that of the protected Peninsular Bighorn, Ovis canadensis cremnobates, found in the Santa Rosa Mountains and Anza-Borrego Desert State Park and into Baja California. 24-B
- The formerly-proposed route along the western boudaries of Joshua Tree National Park was bad enough, but the deliberate routing of the overflights across the Park with a turning point near its center is incomprehensible.
  Question: Who ordered this new route?

ANALYSIS OF THE CUMULATIVE IMPACTS OF 92 ADDITIONAL PLANES IS INCOMPLETE. 24C

- In order to determine effects of 92 more planes, the public needs more information on the aircraft themselves, such as maximum and minimum decibl decible range along each leg of the route, the energy consumption and pollution levels on each leg of the route, the armament, et al.
- The public needs to know the frequency of flight along each leg. 24-D

To safeguard for wise and reverent use by this and succeeding generations those desert areas of unique scenic, scientific, historical, spiritual and recreational value, and, to educate children and adults to a better understanding of the deserts.

- The Public needs to know more about the return route and deviations therefrom.
  Question: Will the decible levels be idential for each leg regardless of direction? 24-D
- The public needs more information on the cumulative impacts on wildlife refuges, ACECs (Areas of Critical Environmental Concern), historic and cultural sites (especially those sensitive to vibration damage), and, mandated management plan areas, both state and federal. 24-E
- The public needs information on night overflights, their frequency, their altitudes, their impacts on noctrnal migratory and resident species for each leg of the route. 24-F
- In order to analyze the above, the public needs a comprehensive route map, not a map sketched to no-scale.. 24-G
  Question: When will such a map be available?

Other groups and individuals will have other questions about the impacts of 92 additional aircraft, or possibly greater numbers or different models in the future.

IN SUMMARY

- Citizens and visitors to the public lands in California expect, and are entitled to, meaningful recreational, educational and inspirational experienes. They anticipate that scientific studies and research will procede in an orderly fashion, that natural resources will be enhanced and historic cultural and geology treasures will not be degraded.
- The DPC expects the USN to carry out its mission with full knowledge and compliance with federal laws and regulations, and, as a good neighbor, with California's laws and regulations.
- The DPC trusts that the USN will listen to the public as well as its own experts.
- The DPC anticipates that the Final Environmental Statement and Record of Decision will address the concerns submitted by DPC and others. 24-H

The DPC appreciates the opportunity to submit these brief comments. Please keep the Desert Protective Council on the mailing list for this proposal's agendas, hearings and documents. Please use the address below to expedite responses.

Respectfully submitted

Harriet Allen

Harriet Allen, Southern Desert Representative
3750 El Canto Drive, Spring Valley, CA 91977.

cc: The Honorable Barbara Boxer
The Honorable Diane Feinstein

Att A

Silence wins in Colorado

Those who felt that the new rules governing flights over the Grand Canyon were too lenient now have something to cheer: On Jan. 3, the Federal Aviation Adminstration issued a separate rule banning all commercial flights over Colorado's Rocky Mountain National Park.

"This is fabulous news to bring in the New Year," said Colorado Rep. David Skaggs, D. "It's what I've been working for — to guarantee that visitors can enjoy the astounding beauty of the park without being buzzed by low-flying helicopters or sightseeing planes."

Unlike the new Grand Canyon restrictions, this ban met with little opposition since there are presently no commercial sightseeing flights over the park. "Too often we wait until peace and tranquillity are destroyed before realizing that they are landscape values worth protecting," says Interior Secretary Bruce Babbitt. "This time we're doing it right."

The ban will remain in place until the FAA develops a rule governing flights over all national parks. And even then, Skaggs is sure the ban will hold: "I'm confident we will be able to retain this protection for the park."

— Elizabeth Manning

Att. B

FALLON, Nev.

2 pilots apologize to woman

FALLON, Nev. — Two Navy pilots have apologized to a woman who was seriously injured in a fall from a horse caused by sonic booms from their jets.

Annette Trent suffered three broken ribs, a concussion and broken teeth when she was thrown from her spooked horse Dec. 1. Even her helmet was cracked in the fall.

The pilots were flying outside a supersonic operation area at the time, a violation of military policy. They visited her home just outside Fallon the day after to apologize.

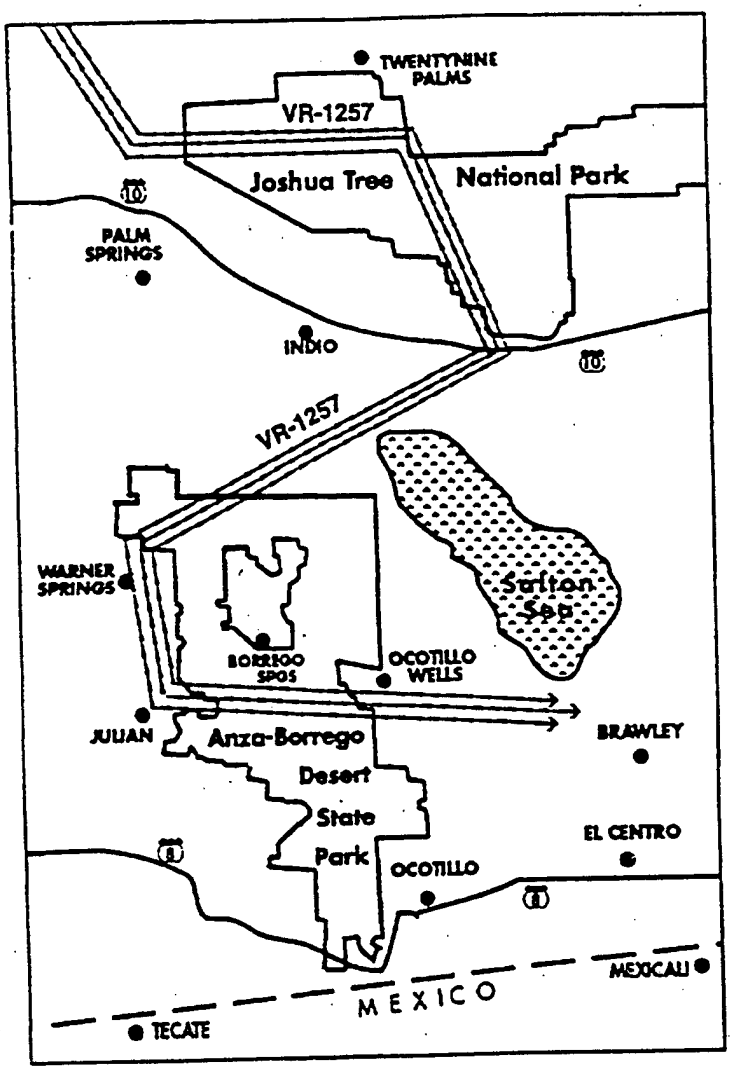
The pilots, whose names were not released, also visited nearby residents who suffered broken windows or other damage.

— From Union-Tribune news services

12/8/97

San Diego Union-Tribune

AH C


TWENTYNINE PALMS
VR-1257
Joshua Tree
National Park
10
PALM SPRINGS
INDIO
10
VR-1257
WARNER SPRINGS
Salton Sea
BORREGO SPOS
OCOTILLO WELLS
JULIAN
Anza-Borrego
Desert
State
Park
BRAWLEY
EL CENTRO
8
OCOTILLO
8
MEXICALI
MEXICO
TECATE

- Letter 24 –
The Desert Protective Council, Inc.
Response to Comments

24-A The proposed action does not include any changes to existing flight corridors or military training areas. The additional F/A-18E/F aircraft would use the same flight corridors and training areas that are currently used by existing aircraft from NAS Lemoore and other military bases. There are no F/A-18E/F aircraft currently operating from NAS Lemoore or any other Navy facility in the western Untied States. When violations of flight restrictions are identified, disciplinary actions may be taken by the appropriate military branch. Please see the response to comment 2-D regarding measures to curtail violations of altitude restrictions. The airspace that would be used for military training areas would continue to be used for these purposes regardless of the proposed action considered in this EIS.

24-B VR-1257 is an established MTR. No new MTRs are included as part of the proposed action. The DOD and the FAA have established and approved all routes that would be used by the aircraft at either of the naval air stations discussed in the EIS. Please see the response to comment 7-B for a discussion of VR-1257 over Joshua Tree National Park and the response to comment 3-B for a discussion of the Peninsular bighorn sheep.

24-C Please see the detailed discussion of the potential effects of the additional aircraft on land use and airspace, air, and noise presented in sections 4.1, 4.6, and 4.7 of the EIS, and in appendices E and F. Further information on the F/A-18E/F aircraft also may be found on the World Wide Web at the Navy's website (http://www.chinfo.navy.mil/navpalib/aircraft/fa18/shortnet.html).

24-D The aircraft would use the ranges identified in tables 2-4 and 2-8 of the final EIS. Training exercises also would be dispersed among the 24 FAA-approved MTRs in the region. No new or altered MTRs are part of the proposed action. Deviation from established routes is not permitted, and procedures are in place to reduce violations (see the response to comment 2-D). Noise levels from overflight events are presented in Section 4.7 of the EIS and can be compared to existing conditions presented in Section 3.7.

24-E Cultural resources are discussed in Section 4.4 of the final EIS. Sensitive land uses are discussed in sections 3.1 and 4.1 of the final EIS. Subsonic aircraft flight operations do not produce noise levels capable of inducing meaningful structural vibrations. Please see the response to comment 16-C for additional discussion of pressure fluctuations associated with overflight noise levels from F/A-18E/F aircraft. Supersonic flight operations are prohibited over most land areas.

24-F Flight operations listed in tables 2-4 and 2-8 in the final EIS present a breakdown of operations by time of day. Use of other military training routes, such as VR-1257, would increase by approximately one sortie a week since aircraft would be dispersed among the 24 MTRs in the region that are used by the Navy. In 1997, there were 164 total aircraft sorties along the VR-1257 route, with 6 aircraft sorties conducted during evening hours and no sorties during nighttime hours. Future evening and night usage patterns are expected to be similar to existing patterns.

24-G Figures showing the R-2508 Airspace Complex, the VR-1257 MTR, and the stereo transit routes from NAS Lemoore to the R-2508 Complex are provided in Section 3.1 of the final EIS. Detailed mapping of all 24 MTRs is available through the Defense Mapping Agency St. Louis, 3200 South Second Street, St. Louis, MO 63118-3399.

24-H All comment letters submitted for the draft EIS are included in the final EIS, and the responses are provided for all substantive environmental issues raised.

National Parks
and Conservation Association

PACIFIC REGIONAL OFFICE

29 January 1998

Mr. Surinder Sikand, Code 18511
U.S. Navy - Naval Facilities Engineering Command, Engineering Field Activity West
900 Commodore Drive
San Bruno, CA 94066-5006

Dear Mr. Sikand:

The National Parks and Conservation Association (NPCA) is America's only private nonprofit citizen's organization dedicated solely to protecting, preserving and enhancing the U.S. National Park System. NPCA was founded in 1919 and currently has over 475,000 members, including over 65,000 in California. We appreciate the opportunity to provide input on the Draft Environmental Impact Statement (DEIS) for the basing of U.S. Pacific Fleet F/A-18E/F Aircraft.

In response to the request for scoping comments, we submitted correspondence dated 23 May 1997. In our letter, we asked the Navy to consider the impacts of this project on lands underlying the airspace involved in this project. Instead, the DEIS erroneously limited its environmental impact analysis to the base and its immediate surroundings. This is incorrect, as this project involves an increase in flight operations, and therefore will impact the airspace used for training flights. The absence of this analysis makes the current DEIS incomplete. 25-A

The DEIS has several other shortcomings, including:

- its *complete* failure to acknowledge and analyze the impacts of current and projected military overflights to federal parklands, including Joshua Tree, Sequoia and Kings Canyon National Parks; 25-B
- preparation without consulting with the National Park Service (NPS) or even addressing the issues NPS raised during the scoping process; 25-C
- an inadequate need statement that fails to justify the *necessity* of basing this expansion on the West Coast and in particular, at NAS Lemoore or El Centro; 25-D
- a failure to respond to public concern plainly expressed by both individuals and public interest organizations during scoping; 25-E
- a failure to fully address the cumulative impacts of this project; 25-F
- an absence of mitigation measures to alleviate potential impacts to federally protected lands; and 25-G
- the omission of a no action alternative. 25-H

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We are surprised that the Navy neglected to evaluate the impacts of military overflights on park wildernesses in this document. For the past several years NPS staff at the aforementioned parks have regularly contacted the Navy about low-level military overflights. As NPS and the public have attested, these military overflights have been a very real problem. Flights originating from Lemoore routinely violate the 3,000 foot AGL advisory. Should Lemoore become the selected site, it would nearly double the number of the base's aircraft and we fear substantially increase the number of both flight operations and violations over the national parks. 25-I

Unauthorized low-level military flights from Lemoore routinely destroy the tranquility of the high Sierra and desert wilderness areas. They have shattered the natural quiet, caused at least two "near misses" with park search and rescue helicopters, threatened human safety and taken an unmeasured toll on wildlife such as the bighorn sheep. As the Sierra Nevada bighorn sheep herd may be close to extinction, this additional environmental stressor is a serious concern. 25-J

We are also perplexed as to why the Navy developed this document without consulting with the National Park Service. The National Environmental Policy Act requires the Navy to consult with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved. By failing to consult with an affected federal agency, the Navy has violated the National Environmental Policy Act. As mentioned earlier, the National Park Service has communicated extensively with the Navy regarding the impacts of military overflights on park resources. To date, an effective solution has yet to be developed and implemented. Nevertheless, the well-known impacts to the national parks are not mentioned or mitigated in this document. We are also concerned by the fact that the NPS was not even notified when this DEIS was released for public review, and only discovered it was available through secondary channels. 25-K 25-L

The Navy also ignored the intent of NEPA by ignoring public and NPS scoping input. Many environmental organizations and concerned citizens raised concerns similar to the National Park Service's during scoping so that they would be addressed in the DEIS. Under the National Environmental Policy Act, scoping is an open process which helps a federal agency determine the appropriate range of actions, alternatives and impacts to be addressed in an EIS. The agency must sift through all input for its critical environmental significance and identify valid issues and alternatives. If certain issues and alternatives raised in scoping are not considered in the DEIS, the docuement should explain why. It is not acceptable to simply ignore proposed issues and alternatives. 25-M

The Navy also did not meet its responsibility to notify all interested and involved parties who had substantively participated in the scoping process. Both the National Park Service and the High Sierra Hikers Association, for example, were not sent a copy of the DEIS, nor were they informed of the public hearing. 25-N

On a more fundamental level, the document does not clearly justify the necessity for this West Coast expansion, other than to say that the aircraft need to be based on the West Coast "to provide a balanced force structure and to be near the West Coast homeported aircraft carriers on which the aircraft deploy." The needs statement must clearly define "balanced force structure," 25-O

why this is essential for naval operations and and justify why Lemoore and El Centro are the only viable locations. 25-O

The DEIS also lacks a no action alternative, a fundamental requirement of any environmental impact statement, under 40 CFR Sec. 1502.14(d). The no action alternative provides an important frame of reference with which to compare action alternatives. 25-P

The discussion of impacts to national park areas must take into consideration that the baseline natural sound ambiance of wilderness areas is substantially lower than that in an urban setting. When analyzing potential noise impacts to park units, it is not appropriate to use the urban-based thresholds of <65dB. Studies have shown that the baseline natural sound ambiance of park lands is substantially lower than that in an urban setting. For example, background decibel levels in park wilderness have been found to be well below 20 dB. By basing the analysis on the 65 dB threshold, it will underestimate impacts to park areas and potentially permit substantial disruption of the natural quiet in national park units. The true impacts of this proposal should be evaluated using field testing and noise modeling of projected sound, based on methods such as those in use to measure impacts to natural quiet in Grand Canyon National Park. 25-Q

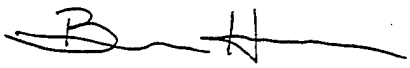
Based on the impacts analysis, the DEIS also needs to contain mitigation measures that will effectively minimize or eliminate significant impacts to High Sierra parks and wilderness areas. For example, the EIS could identify routing or scheduling strategies that alleviate impacts to the park. Pilots could be required to maintain higher elevations when crossing the Sierra Nevada and redirect flight routes to minimize their travel over national parks and wilderness areas. These mitigation measures should be guided by periods of high visitation or seasons during which species are more sensitive to disturbance. This also is an opportunity to develop better enforcement mechanisms to ensure compliance with the 3,000 foot AGL advisory. 25-R

The DEIS must also address how the impacts of 92 additional jets at the Lemoore NAS translates into flights over the national parks. 25-S Also, the document needs to address the cumulative environmental impacts of current and anticipated flight traffic from the several other bases and agencies that share the use of the R2508 airspace. 25-T The modified draft also needs to contain an explanation and map of flight routes and volumes in the surrounding region. 25-U

To comply with NEPA, the Navy must amend or supplement the draft and reissue it for public review. This revision should address the park and wilderness issues raised by the public and National Park Service. 25-V

Thank you for the opportunity for public review and oversight. Please keep us updated on all developments and decisions related to this project. Thank you.

Sincerely,



Brian Huse
Director, Pacific Region

- Letter 25 –
National Parks and Conservation Association
Response to Comments

25-A The EIS has been revised to include an analysis of potential impacts beyond the immediate vicinity of NAS Lemoore and NAF El Centro. An analysis of potential effects of overflight on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS.

25-B An analysis of potential effects of overflight on the national parks referenced has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS.

25-C The Navy has met with the National Park Service to specifically address their concerns about aircraft overflights and will continue to meet with the National Park Service in the appropriate arena. The Navy also participates in a regularly scheduled R-2508 Department of Defense/Land Managers conference. Please see the response to comment 2-H for scoping issues raised by the National Park Service.

25-D The proposed action evaluated in this EIS is not the basing of the F/A-18E/F aircraft but the impacts resulting from the development of facilities to support them. In Section 1.2, Need for the Proposed Action, and in Section 2.2.1, Site Eligibility Criteria, it is stated that, in order to efficiently and strategically balance the deployment of aircraft (most of which are assigned to the Pacific Fleet), it is necessary for the Navy to locate the F/A-18E/F aircraft on the West Coast. Other alternative locations on the West Coast were considered but were eliminated from detailed analysis (Section 2.4).

25-E All concerns expressed by the public during the scoping process are identified in Appendix A and, where appropriate, were considered in preparing the EIS. An analysis of the potential effects of overflight on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7 Noise, of the final EIS. Please see the response to comment 2-H regarding issues raised during the scoping process.

25-F Cumulative impacts of the proposed action are discussed in Chapter 5 of the EIS.

25-G An analysis of potential effects of overflight on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS. Use of existing flight routes and designated military training areas by the added F/A-18E/F aircraft is not expected to significantly change existing conditions for land uses under the affected airspace. In addition, Navy aircraft operating within designated military airspace, such as R-2508, are subject to the restrictions of that airspace. The Navy's lack of authority over these areas would prevent it from implementing mitigation measures that would alter operations in the airspace. Measures to minimize the effect of aircraft training operations on lands below R-2508 are detailed in the *R-2508 User's Handbook* (see Appendix H).

25-H The No Action Alternative is discussed in Section 2.3.3 of the final EIS.

25-I Violations of altitude restrictions are of concern to the Navy, and measures are being taken to curtail them. Please see the response to comment 2-D for further discussion of this issue.

25-J Military flights within the R-2508 Complex are required to observe the 3,000 -foot AGL restriction over Sequoia National Park, Kings Canyon National Park, the 1977 boundaries of the former Death Valley National Monument, and the 1977 boundary portion of the Domeland Wilderness. Flight altitudes as low as 200 feet AGL are authorized in other portions of most MOAs associated with the R-2508 Complex. Please see the response to comment 2-D regarding violations of altitude restrictions, the response to comment 3-B regarding the California bighorn sheep, and the response to comment 2-E for a discussion of safety concerns and the "near-miss" with the National Park Service helicopter, and the response to comment 2-F concerning noise from the proposed action in national parks and the wilderness areas.

25-K Input from the National Park Service was solicited during the scoping process and in comments on the draft EIS. In addition, the Navy and the National Park Service met prior to issuance of the final EIS to discuss concerns of the National Park Service.

25-L Additional discussion of low-level flights over the parks and wilderness areas has been added to sections 3.1, 3.7, 4.1, and 4.7 of the final EIS. The Navy is studying how aircraft noise is perceived by park visitors to determine the measures that can be taken to minimize any effects. Please see the response to comment 2-J regarding current actions by the Navy to understand noise concerns, the response to comment 2-F regarding noise in park and wilderness areas from the proposed action, and the response to comment 2-D for a national discussion of measures to curtail violations of altitude restrictions.

25-M Please see the response to comment 2-H regarding issues raised during the scoping process.

25-N The public and all interested parties were notified of the publication of the draft EIS through a Federal Register notice on December 12, 1997, and through newspaper advertisements in the Hanford Sentinel, the Fresno Bee, and the Imperial Valley Press on December 21 and 22, 1997. As indicated in Chapter 10, Distribution List, a number of copies of the draft EIS were sent to the Department of Interior, and Notices of Availability of the draft EIS were sent to several persons within the National Park Service.

25-O The criteria describing the West Coast basing requirement for the F/A18E/F aircraft is presented in Section 2.2.1. Section 1.2, Need for the Proposed Action, Section 2.3.3, Site Eligibility Criteria, and Section 2.4, Alternatives Considered but Eliminated, offer further discussions of West Coast siting and other Navy installations besides NAS Lemoore and NAF El Centro that were considered.

25-P The No Action Alternative is discussed in Section 2.3.3 of the EIS. The No Action Alternative provides the baseline for impact assessment in the EIS.

25-Q Typical background noise levels in natural environments are substantially higher than 20 dB. A 20 dBA noise level is typical of an empty recording studio. The referenced 20-dB noise level is not an average noise level for any continuous monitoring period. It appears to come from a statistical summary of data based on one of the quietest 1-hour periods covered by the noise monitoring study. Assuming that conventional noise monitoring equipment was used, it represents the quietest 360 individual seconds during that 1-hour period.

In the natural environment, average noise levels in the 20 dBA range would occur only in conditions with no wind, no surface water, no insects, no birds, no other animals, and no human visitors. Barren, lifeless areas with no wind and no water are not typical of most wilderness areas

or national parks. Natural background noise levels probably will average 30 to 40 dBA during periods with no perceptible wind and no animal activity at locations removed from flowing water. Even light to moderate winds will typically produce noise levels of 45 to 55 dBA. Stronger winds will raise noise levels into the 60 to 65 dBA range. Birds, insects, and other animal noise can easily bring noise levels into the 45 to 55 dBA range. Noise along the banks of mountain streams will often be above 60 dBA, with higher noise levels in areas near significant rapids or waterfalls. Noise levels will often exceed 65 dBA during rainstorms, with higher noise levels if there are strong winds. Thunder, rock slides, or avalanches will produce brief periods of very high noise levels.

The EIS does not use urban noise criteria (weighted average 24-hour noise levels) to evaluate the noise impact of discrete aircraft overflight events. Short-term peak noise levels have been used to characterize individual flyover events. Those peak noise levels must be judged in the context of typical noise levels for the affected area. But the agencies administering lands overflown by military aircraft have not adopted any quantitative criteria for determining when the magnitude or frequency of noise events would constitute an adverse impact on significant resources or land uses.

25-R Please see the response to comment 2-M for discussion of suggested changes to aircraft operations, such as those recommended by the commentor. Enforcement mechanisms to prevent violations of altitude restrictions are in place, as discussed in Section 3.1 of the final EIS. The Navy remains open to improved approaches.

25-S Additional discussion of low-level flights over the parks and wilderness areas has been added to sections 3.1, 3.7, 4.1, and 4.7 of the final EIS. The response to comment 2-F also discusses this issue.

25-T As discussed in Section 4.1, Land Use and Airspace, the use of R-2508 Complex by F/A-18E/F aircraft would be consistent with the designated use, and the increased number of sorties could be accommodated. The EIS does consider the effects of the proposed action in transit to and within R-2508, but cumulative environmental analysis of R-2508 would more appropriately be conducted by the controlling authority for R-2508. The analysis in Chapter 4 of land use and airspace and noise does consider the cumulative use of transit corridors between NAS Lemoore and the R-2508 Complex under project build-out conditions.

25-U An additional explanation of affected airspace is provided in Section 3.1 of the final EIS. New figures to show the airspace boundaries and sensitive land uses for the R-2508 Airspace Complex, the VR-1257 MTR, and stereo transit routes also are provided in Section 3.1 of the EIS. Existing aircraft operations at the two proposed siting facilities have been added in tables 2-3 and 2-7. In addition, excerpts from the R-2508 Environmental Baseline Study has been added to the final EIS as Appendix H. This document provides a comprehensive assessment of the current conditions in the R-2508 Airspace Complex. Please see the response to comment 24-G regarding the availability of comprehensive route maps for all MTRs that may be used by aircraft at NAS Lemoore or NAF El Centro.

25-V The draft EIS has been revised to reflect all comments received on the draft EIS, the public has been informed of the process, and the Navy has met with the National Park Service to address its specific concerns; therefore, reissuance of the draft EIS is not necessary. A 30-day no action period will follow publication of the final EIS, during which additional comments may be made.

The Gas Company®

Letter 26

January 6, 1998

Mr. Surinder Sikand, Code 18511
US NAVY, Eng. Field Act. West
900 Commodore Drive
San Bruno, CA 94066-5006

Southern California Gas Company
9400 Oakdale Avenue
Chatsworth, CA
91313-2300

Mailing Address:
Box 2300
Chatsworth, CA
91313-2300

Subject: **Agency Comment (NEGATIVE DECLARATION) for DEIS for the Development fo Facilities to Support Basing US Pacific Fleet F/A-18E/F Aircraft on the U.S.West Coast, (NAS Lemoore, State of California).**

This letter is not to be interpreted as a contractual commitment to serve this proposed project, but only as an information service. Its intent is to notify you that Southern California Gas Company has included the additional natural gas demand in projections for this area. Gas service can be provided **without** significant impact on the environment from existing S.C.Gas Co. facilities. 26-A

Service would be in accordance with our policies and extension rules on file with the California Public Utilities Commission at the time contractual arrangements are made. The availability of natural gas service, as set forth in this letter, is based on present conditions of gas supply and regulatory policies. As a public utility, Southern California Gas Company is under the jurisdiction of the California Public Utilities Commission. We can also be affected by actions of federal regulatory agencies. Should these agencies take any action which affects gas supply or the condition under which service is available, gas service will be provided in accordance with the revised conditions.

Please consider the Gas Company regarding air quality management, energy conservation, new technology and incentive plans in effect at the time. **Mr.Earl Plumber** is the Gas Company Account Executive for your construction in the Kings County area. Have the engineer/architect/developer contact him at **(213) 244-3584** for an energy consultation.

If you have any questions, please contact me at **(818) 701-3324.**

Sincerely,

Jim Hammel
Technical Services, Northern Region
818-701-3324

c: D. Terry, Visalia District Base
E. Plumber, Non-Core Marketing
H. Corralejo, Environmental Compliance
L. Douglas, Regional Affairs
E. Weigman, Engineering
City Correspondence File

c:\lfiles\agenccom\Navy.doc

- Letter 26 –
The Gas Company
Response to Comment

26-A Thank you for your review of the document. The Gas Company's ability to provide gas service for the proposed action is noted.

The Lemoore Advance
339 West D Street, Suite A, Lemoore, CA 93245
(209) 924-5361, fax 924-6220, email LManches@LemooreNet.com

January 29, 1997

Attn: Mr. Surinder Sikand, Environmental Planning Branch, Code 70311
Commanding Officer
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Dear Mr. Sikand,

The Lemoore Advance, the weekly civilian newspaper serving our community, is strongly in favor of siting 164 new F/A-18E/F Super Hornet aircraft at Lemoore Naval Air Station. 26A-A

We are well aware that several organizations have expressed concern about low-altitude overflights of the Sierras by Hornet aircraft during training missions, and that they fear the number of those overflights will increase with the net gain of 92 fighter aircraft at LNAS. We believe that squadron commanders can and should be directed to resolve the problem of low-level overflights, and that the concerns about the Sierras have no necessary connection with the siting of new Super Hornets at Lemoore.

I am enclosing a copy of today's *Advance* editorial page, which features an opinion piece by our general manager encouraging Lemooreans to write you supporting Super Hornet siting at LNAS. Please be assured that Mr. Anderson's opinion has our full backing as well as that of our entire community.

Feel free to contact me if you have any questions about this or any other matter.

Sincerely,

Lee Manchester
Editor

Perspecti On

Hornets belong in Lemoore

By Dale L. Anderson
Advance General Manager

Time is running out.

There are only a few days left in the public comment period concerning the location of the Navy F/A-18E/F to Lemoore Naval Air Station. The 45-day period for public input will end on February 2, 1998. That is Monday. All comments from the people who will be most affected by this decision must be postmarked by that date.

Why is it important? There are several reasons, and among the most important is that many people who oppose the location of these airplanes at NASL have already spoken. During a recent public meeting, people representing concerns that the F/A-18E/F would cause problems in mountain areas were outspoken. They were provided forms to lodge their concerns with the Navy while the feds consider the matter.

The Navy has determined that Lemoore is the favored site for location of 164 of the newest versions of the F/A-18. If approved, the action would mean an increase of 92 aircraft in Lemoore. There would be 72 current models replaced by the more advanced plane. With the additional aircraft there is also an increase in support facilities and personnel. There are additional families, and yes, additional dollars for our community.

There may be some other advantages of locating the next generation of Navy fighter/attack aircraft here in Lemoore, and that is permanence.

There have been several rounds of base closure discussions in the past. Lemoore has dodged the bullet so far, but if these airplanes are allowed to be sent to El Centro, the second choice, Lemoore would lose much of the clout it needs to ensure stability in the next century.

The concerns raised at the recent meeting were valid, to be sure. But are they more valid than the reasons we here in Lemoore need the planes to be based here?

Jack Shook of Visalia represented the Back Packer Horsemen of California at the meeting. He said that he was concerned about the potential of increased low-level flights in the Sierra Nevada Mountains. He indicated the flights, which are illegal, are also a danger to park aircraft and to those trying to ride horses in the park. He also suggested the planes would be a nuisance to those trying to enjoy the mountains in peace and quiet.

Others, including Linda Mutch of the Tulare Audobon Society, expressed concerns about the noise levels in state and federally owne parks in the mountains.

There is no argument that th type of intrusion in the mountains unacceptable, and there should b strict enforcement of flight path and altitude restrictions. These a not reasons, however, to prevei the planes and all that comes wit them from being assigned t Lemoore.

Lemoore has come to depend o the Naval Air Station as a goc neighbor and friend. Our commt nity benefits in many ways fro this relationship. The base, in tur benefits from our support of th Navy. It would be a shame to allo a few individuals more concerne about peace and quiet in the mou tains, some 50-plus miles to th east, to determine the future of ot community.

The note you send to the con mittee studying this matter doesn need to be long or masterfully wri ten. It does need to be sincere an *in the mail by Monday.*

Please do your part.

Write to: Commanding Office Engineering Field Activity Wes Naval Facilities Engineerin Command, 900 Commodore Driv San Bruno, CA 94066-500(Attention: Mr. Surinder Sikan Environmental Planning Branc Code 70311. Comments may als be faxed to 650-244-3206.

Strengthening agriculture's infrastructure

By Donald G. Gordon Jr.
Special to the Advance

(DHS). One component allocates $991,000 to the Animal and Plant

There is also another componer of the $3.1 million coordinate

- Letter 26A –
The Lemoore Advance
Response to Comment

26A-A Your interest in the proposed action and your support of the preferred alternative is noted.

1-15-98

DEAR MR. SURINDER SIKAND:

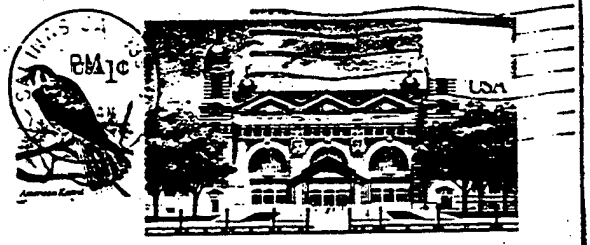
PLEASE DISCONTINUE THE PRACTICE HAVING MILITARY JETS FLY OVER THE BACKCOUNTRY WILDERNESS of SEQUOIA & KINGS CANYON NATIONAL PARKS. PEOPLE WANT TO ENJOY THE SILENCE of the WILDERNESS WITHOUT THE NOISE from JET ENGINES. SURELY, THIS ISN'T NECESSARY. MILITARY PILOTS DO NOT NEED TO FLY OVER WILDERNESS to UPGRADE THEIR FLYING SKILLS. THANK YOU

SINCERELY, Barbara Baldock



Barbara J. Baldock
1330 Castro Court
Monterey, CA 93940

27-A



COMMANDING OFFICER
ENGINEERING FIELD ACTIVITY WEST
NAVAL FACILITIES ENGINEERING COMMAND
ATTN: MR. SURINDER SIKAND, ENVIRONMENTAL
PLANNING BRANCH, CODE 70311
900 COMMODORE DRIVE
SAN BRUNO, CA 94066-5006

Ellis Island
Centennial 1993

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- Letter 27 –
Barbara J. Baldock
Response to Comment

27-A The Navy concurs that noise in wilderness areas is an important issue and is taking steps to address these concerns. Please see the response to comment 2-J for measures to address overflight and noise concerns, as well as the response to comment 2-F for a discussion of noise and national parks and wilderness areas. Flight restrictions over national parks and wilderness areas are established; however, as noted in Section 3.1, Land Use and Airspace, the R-2508 Complex and other military airspaces, such as VR-1257, are specifically designated for military training use.

P.O. Box 7720
South Lake Tahoe, CA 96158
January 18, 1998

Mr. Surinder Sikand, Code 18511
US Navy - Naval Facilities Engineering Command
Engineering Field Activity West
900 Commodore Drive
San Bruno, California 94066-5006

Dear Mr. Sikand:

I am writing to comment on the Draft Environmental Impact Statement for Development of Facilities to Support the West Coast Basing of the F/A-18E/F Aircraft ("DEIS"). I have reviewed the DEIS, and am very surprised that it fails to address critical issues.

I am most concerned about the impact of military overflights of national parks and wilderness areas in California's Sierra Nevada mountains. I have for many years taken backpacking and horse-packing trips into these remote and supposedly protected areas, and had my wilderness experience completely destroyed by the noise generated by military overflights. There are two distinct issues here, both of which need to be carefully evaluated and mitigated before the US Navy should pursue any plans to expand its fighter jet fleet at Lemoore NAS: (1) low-level overflights, and (2) upper-level overflights. 28-A

Regarding low-level overflights, I have witnessed frequent low-level overflights by military jets each and every time I have visited national parks and wilderness areas in the southern Sierra Nevada. On most occasions, the violators have been gray F-18s, however I have also witnessed low-flying F-16s, A/E-6s, F-4s, and other types of low-flying military aircraft. On my latest visit to Sequoia National Park (a ten-day trip in September of 1997), I witnessed low-flying F-18s every single day of my trip. The offending jets were sometimes as low as 500 feet above ground level. This is an acute problem, as the noise generated by such low-flying jets completely shatters the natural quiet, which is an important reason why I visit the national parks in the first place. During my talks with other hikers, I learned that most of the park's backcountry visitors were also significantly disturbed by the constant low-level military overflights of southern Sequoia National Park.

I define "upper-level" military overflights as those that comply with current FAA advisories to remain at least 2,000 - 3,000 feet above ground level. Your DEIS needs

to acknowledge that even these flights have a significant, adverse effect on the natural quiet of our national parks and wilderness areas. Upper-level military overflights are a significant, chronic problem in the southern Sierra, because military jets fly "back-and-forth" over Sequoia National Park and other wilderness areas on a constant, daily basis, and generate significant levels of noise even if they remain above the arbitrarily-set FAA guidelines. This issue must also be fully addressed in your EIS for expansion of the F-18 fleet at Lemoore NAS. While mitigation measures (such as requiring all jets to maintain an elevation of at least 20,000 feet when crossing the Sierra) may reduce somewhat the noise experienced by those on the ground, a careful, quantitative analysis of all proposed mitigation measures should be performed to assure that the natural quiet can be maintained. (I suggest that you explore, as a starting point, using the methods currently in use to measure impacts on the natural quiet in Grand Canyon National Park.) 28-B

In summary, my experiences in national parks and wilderness areas of the southern Sierra Nevada have often been ruined by the noise created by the past and current level of military overflights. Impacts due to the current level of military overflights in this area need to be addressed and reduced. Furthermore, any proposal for expansion of fighter jet fleets that may fly over these areas must be mitigated to assure protection of the natural quiet in national parks and wilderness areas. The DEIS is fatally deficient because it fails to address these issues. 28-C

Please supplement your DEIS to fully address the issue of overflights of our national parks and wilderness areas in the Sierra Nevada, and re-circulate another DEIS for public review. This must necessarily include an assessment of the current situation, as well as modification of the current proposal (and/or specification of mandatory mitigation measures) to ensure that the current problems with overflights are not exacerbated. Please send to me copies of your supplemented DEIS, as well as your decision documents, and keep me informed of all opportunities for public comment. 28-D

Sincerely,

Thomas J. Suk

- Letter 28 –
Thomas J. Suk
Response to Comments

28-A Please see the response to comment 2-D regarding low-level overflights and the response to comment 2-F regarding noise from permitted overflights.

28-B Please see the response to comment 2-F for a discussion of noise conditions in national parks and wilderness areas and the response to comment 2-M regarding increasing the minimum flight altitude.

28-C Please see the response to comment 2-F.

28-D Please see the response to comment 2-G regarding recirculation of the draft EIS. The commentor has been added to the distribution list for the final EIS.

Lorraine L'Herrou
2815 La Cresta Drive
Bakersfield, CA 93305
January 15, 1998

Commanding Officer
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno CA
Attn; Mr. Surinder Sikand, Environmental Planning Branch

Re: Draft EIS for Development of Facilities to Support West Coast Basing of F/A-18E/f Aircraft

Dear Commander:

I am writing in support of siting this facility at El Centro. Lemoore Naval Air Station is located in the San Joaquin Valley and the aircraft will be passing over the Sierra Nevada to other sites in the desert. It would be better to site it in El Centro where the air is cleaner and there are enormous unpopulated areas that will not be affected by the noise. 29-A

4.7 Noise on Page 4-51, 1st paragraph, 1st sentence, says that aircraft would fly at altitudes above 10,000 feet. That is fine in the San Joaquin Valley. I would prefer that it read at heights 10,000 feet above the surrounding terrain. 100 miles due east of Leemore is Olancha Peak at 12,135. Not far away are the other peaks of the Sierra. 29-B
I treasure the Sierra Nevada and recreational is one of the leading industries in California. Low overflights have long been a thorn in the side of those who enjoy the solitude of the back country. I have been party to low flights through valleys in the 7500-9000' ranges of the Golden Trout Wilderness. I have heard many complaints from hikers that when they called China Lake NWC to complain that their complaints were ignored. Reasonable people know that "hot-shot" pilots with the best of equipment need challenges. We do not feel that those challenges should be over 2 national parks and some of the most pristine areas in the United States. I would volunteer Kern Canyon east of Bakersfield as a practice valley for those pilots.

The Draft EIS does not address these noise concerns and I will repeat that El Centro appears a better area for siting.

Sincerely,

Lorraine L'Herrou

- Letter 29 –
Lorraine L'Herrou
Response to Comments

29-A Please note that the EIS has indicated that a significant and unmitigable noise impact would occur as a result of basing the F/A-18E/F aircraft at NAF El Centro.

29-B Please see the response to comment 2-M regarding increasing minimum flight altitudes for aircraft transiting from NAS Lemoore to the R-2508 Complex.

Mr. Kris Lindstrom
P.O. Box 51008
Pacific Grove, CA 93950
408-372-5989

Commanding Officer, Engineering Field
Activity West, Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, Ca 94066-5006.

Attn: Mr. Surinder Sikand,Environmental Planning Branch, Code 70311.

Subject: Draft Environmental Impact Statement from the Department of the Navy Regarding Lemoore Naval Air Station.

I am very concerned about the potential increased Military Jet Noise Over Sierran Wilderness that could result from redeployment of training activities to Lemoore AFB. 30-A

The backcountry wilderness of Sequoia and Kings Canyon National Parks is a popular "flyover" zone for military pilots from China Lake and Lemoore Naval Air Bases and Edwards Air Force Base.

The recently released Draft Environmental Impact Statement from the Department of the Navy selecting Lemoore Naval Air Base as the preferred alternative of 2 possible sites for increased flight training and receiving would result in 92 additional aircraft being based there. The DEIS indicates "a less than significant noise impact would result from increased aircraft operations at NAS Lemoore " and that "off-base uses generally would not be exposed to incompatible noise level." As a professional environmental planner and backcountry user, I disagree with this conclusion and believe it would result in a significant impact and unacceptable. No additional military flights from low flying jets over the Sierra crest and the River Drainage should be allowed.

I would like to receive a copy of the Response to Comments.

Very truly yours,

Kris Lindstrom

Kris Lindstrom

- Letter 30 –
Kris Lindstrom
Response to Comment

30-A Please see the response to comment 2-F for a discussion of potential noise effects of the proposed action on national parks and wilderness areas.

Letter 31

January 10, 1998

Naval Facilities Engineering Command
San Bruno, California

Dear Sir:

I am commenting on the DEIS for the location of F/A-18 aircraft on the West Coast. It is imperitive that the present military presence over the mountains of the High Sierra be reduced, not increased!

Please recognize that present overflights create safety, ecological, and aesthetic problems. The Navy should adopt measures to remedy the existing problems, and certainly not exacerbate them. 31-A

Please analyze and disclose how the addition of 92 fighter jets to its fleet at Lemoore NAS will worsen existing problems with these overflights in the High Sierra.

Fortunately, solutions are readily available (eg: fly higher in altitude, or, choose non-national park and non-protected areas to fly over.)

Thank you for your consideration—

Sincerely—

P. Moritz

Peter Moritz
1647 Willow Pass Rd. #110
Concord, CA 94520-2611

- Letter 31 –
Peter Moritz
Response to Comment

31-A Please refer to Section 3.1, Land Use and Airspace, for a discussion of flights over sensitive areas, such as national parks and wilderness areas. Please see the response to comment 2-E for a discussion of safety from military overflight, the responses to comments 3-A, 3-B, 3-C, and 3-D regarding potential effects on biological resources beneath training areas or flight routes, and the responses to comments 2-E and 2-F for potential effects of noise on national park and wilderness areas from the proposed action.

Alan R. Pendley
27920 Ridgecove Court
Rancho Palos Verdes, CA 90275
(310) 377-5171

16 January 1998

Commanding Officer
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94006-5006

Attention: Mr. Surinder Sikand
Environmental Planning Branch, Code 70311

Subject: Military Overflights of the Sierra Nevada

Dear Mr. Sikand,

I am writing to comment on the DEIS for the location of F/A-18 aircraft on the West Coast.

Military overflights of the Sequoia and Kings Canyon National Parks, and the Inyo National Forest, shatter the natural quietness and solitude that users of these areas treasure. I have personally experienced an overflight while on the summit of Mount Whitney, the highest peak in the 48 states. The aircraft was no more than 50 feet above the peak, and no more than 100 yards laterally from the summit (the aircraft was so close that I was able to see the pilot's oxygen hose that was attached to his mask). There was no advance warning of this "buzzing" of the people on the peak, and it was entirely inappropriate (and possibly illegal).

In accordance with the National Environmental Policy Act, I am asking that you consider the following points:

1. The Navy needs to acknowledge the problems that currently exit; 32-A
2. The Navy needs to analyze and disclose how the addition of 92 F/A-18 aircraft to its fleet at Lemore NAS will exacerbate existing problems with overflights in the Sierra Nevada; and 32-B
3. The Navy should adopt measures to remedy the existing problems. 32-C

Mr. Sikand, I am employed by the manufacturer of the F/A-18, and am therefore grateful that the Navy has purchased them from McDonnell Douglas. I would only ask that the Navy adopt measures to prevent military overflight environmental problems from getting worse with the addition of 92 F/A-18 aircraft.

Thank you for your consideration.

Alan R. Pendley
Past President
McDonnell Douglas Backpacking Club

- Letter 32 –
Alan R. Pendley
Response to Comments

32-A Please refer to Section 3.1, Land Use and Airspace, and to Section 3.7, Noise, for a discussion of flights over sensitive areas, such as national parks and wilderness areas

32-B Please see the discussion of the potential effects of the proposed action in Section 4.7, Noise, in the final EIS. See also the response to comment 2-E regarding the effect of the proposed action on sensitive resource areas in the Sierra Nevada Mountains.

32-C Please see the response to comment 2-F for a discussion of noise and national parks and wilderness areas and the response to comment 2-J regarding implementation of mitigation measures.

1/12/90

Letter 33

COMMANDING OFFICER
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CA 94066-5006
ATTN: MR. SURINDER SIKAND
ENVIRONMENTAL PLANNING BRANCH
CODE 70311

DEAR SIR,

THIS LETTER IS IN COMMENT TO "DEIS FOR THE LOCATION F/A-18 AIRCRAFT ON THE WEST COAST."

AS A FREQUENT HIKER IN THE CONTRAL + SOUTHERN SIERRA I AM DISTURBED BY THE AMOUNT OF AIR TRAFFIC IN THE SIERRA I'VE HIKED TO SUCH PLACES AS THE UPPER KERN BASIN & THE KAWEAH BASIN - 30 MILES FROM ANY PAVED ROADS - ONLY TO BE STRAFFED BY LOW FLYING MILITARY ~~FIGHTER~~ FIGHTERS IN THE KERN RIVER TRENCH AND OVERFLOWN ON STARRY "WILDERNESS" NIGHTS IN THE UPPER KERN + KAWEAH BASINS. THE NAVY NEEDS TO RECOGNIZE THE PROBLEM WITH OVERFLIGHTS THAT CURRENTLY EXIST AND IT NEEDS TO ~~RECOGNIZE~~ ANALYZE AND ~~DISCLOSE~~ DISCLOSE HOW THE ADDITION OF 92 FIGHTER JETS TO ITS FLEET AT LEMOORE NAS

WILL EXACERBATE EXISTING PROBLEMS WITH OVERFLIGHTS IN THE HIGH SIERRA. 33-A

ALSO, THE NAVY SHOULD ADOPT MEASURES TO REMEDY THE EXISTING PROBLEMS OR AT A MINIMUM, TO ENSURE THAT THE CURRENT PROBLEMS DO NOT BECOME WORSE 33-B

THANK YOU.

SINCERELY,

STEVE SCHRAMM
205 COSKY DR #2
MARINA, CA 93933

- Letter 33 –
Steve Schramm
Response to Comments

33-A Please refer to Section 3.1, Land Use and Airspace, and to Section 3.7, Noise, for a discussion of current flights over sensitive areas, such as national parks and wilderness areas.

33-B Please see the response to comment 2-J regarding current Navy actions to alleviate noise concerns in the national parks and wilderness areas.

Editor
Visalia Times Delta

MILITARY FLIGHTS (CRASHES?)

Headline in the near future...

MILITARY JET AND HELICOPTER COLLIDE- 3 DEAD.

SEQUOIA PARK SCENE OF DISASTER.

Backcountry Park Rangers have reported 69 low altitude flights below the minimum 3000 feet that aircraft are to maintain over the park. 34-A

On September 23rd, I witnessed five such flights (100 to 300 feet above the trees in the Kern Canyon) at a speed of 500-700 mph. These were Navy F-15's and F-18's that are capable of 1,500 mph. At the time there were 6 Park Service aircraft involved i a Search and Fire Suppression in this area.

I enjoy riding and packing into the backcountry with my family and friends, but can you imagine going up a narrow trail with two young girls, their fathers, 7 head of horses and mules and a jet (A-6), flying below you at a distance of 100 yards?

Military officials at China Lake, Edwards and Lemoore deny that such flights happen. Although a few "Top Guns" have lost a day of training for such a minor infraction.

If there is a stock related death due to a low flight, will only make the obituary column.

WHEN WILL IT STOP?

MAYBE WHEN IT MAKES THE HEADLINES!

Jack Shook
Visalia

- Letter 34 –
Jack Shook
Response to Comment

34-A Please see the response to comment 2-D regarding violation of altitude restrictions above national parks and wilderness areas.

LARRY & BARBARA TIDBALL
3826 North Weston Place Long Beach, CA 90807 310/732-3635

January 19, 1998

Commanding Officer
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006
Attention: Mr. Surinder Sikand, Environmental Planning Branch, Code 70311

SUBJECT: DEIS for the location of F/A-18 aircraft on the West Coast.

Dear Mr. Surinder Sikand:

We are frequent visitors to the mountains in the Sierra Nevada as well as desert areas in California, Utah and Nevada. It is not uncommon for us to be startled while hiking in the desert by a military jet zooming up the canyon we are climbing in. The noise generated is always tremendous and often momentarily will frighten us and cause us to loose our footing. We have unfortunately come to expect such occurrences in the desert from low flying military aircraft. 35-A

August and September of 1996 we experienced to worst examples of low flying military aircraft we had ever been subjected to while climbing in the Sierra. We were on a nine-day backpack and climbing trip from Sequoia over to Nine Lakes Basin, then on to the Kern Canyon, over Triple Divide Pass and back out through Sequoia. On the day we crossed Triple Divide Pass we were subjected to low military over flights at least every 60 minutes for the better part of the day. These jets were not flying over; they were flying in and out of canyons and around the peaks at close range. The Triple Divide Pass day was the worst, but the trip was subjected to multiple military low range over flights every day, except in the Nine Lakes Basin area.

We understand that the Navy is considering an increase the F-18 fighter fleet at Lemoore. We are extremely concerned about the affects increased flights will have on the peace in the high Sierra. As a member of the Environmental Planning Branch, you need to be aware that military over flights currently are causing problems in the desert and Sierra. Increased flights will only increase these problems. 35-B

It is very important that the Navy analyze how the increased F-18 fleet will affect the high Sierra. Measures regarding the conduct of pilots, locations flown, elevations flown, environmental impacts and mitigation of impacts need to be implemented. The sky above the mountains is not "free" space for military pilots to abuse. 35-C

Thank you for reviewing our comments,

Very truly yours,

Larry & Barbara Tidball

- Letter 35 –
Larry and Barbara Tidball
Response to Comments

35-A Please see the response to comment 2-D and the text added to Section 3.1 for a discussion of areas subject to altitude restrictions, violations of altitude restrictions, and the complaint process for violations.

35-B Please see the discussion of noise in the Sierra under current conditions and with the proposed action in sections 3.7 and 4.7, Noise, of the final EIS. Please see also the response to comment 2-F for a discussion of noise and national parks and wilderness areas.

35-C Please refer to Section 3.1, Land Use and Airspace, for a discussion of flights over sensitive areas, such as national parks and wilderness areas, and for a discussion of procedures for addressing violations of flight restrictions. Please see the response to comment 2-C regarding routes and altitudes flown by aircraft above the Sierra.

Letter 36

Arthur D. Unger
2815 La Cresta Drive
Bakersfield, CA 93305-1719
(805) 323-5569

Mr. Surinder Sikand
Environmental Planning Branch

January 12, 1998

Dear Mr. Sikand:

Jet planes flying several hundred feet off the ground have disturbed my wife and I a few times during the 15 or so trips in which we sought solitude in wilderness on the Kern Plateau, not far from Sequoia National Park. We hope jets will not fly low in any wilderness area or anywhere in Sequoia National Park.

The jets we saw were never far from the walls of the canyon they were in. Would a sudden gust of wind result in the deaths of the pilots and a forest fire?

An EIS should be required if jets are to invade wilderness. The EIS must discuss whether the quality and cost of national security would be affected if wilderness over flights were prohibited. Are there any alternatives, such as flying among balloons that are several hundred feet off the ground? 36-A 36-B

Thank you, Arthur D. Unger

- Letter 36 –
Arthur D. Unger
Response to Comments

36-A No changes to airspace are part of the proposed action. Control of the airspace above the national parks and wilderness areas are not under direct Navy authority, and any changes in operations would require Department of Defense and FAA approval. Airspace used by F/A-18E/F aircraft is designated for military use. Please see the response to comment 2-M for a discussion of measures suggested to address overflight concerns.

36-B There are no venues to conduct training exercises other than designated military airspace that would be used by the F/A-18E/F aircraft, as identified in tables 2-4 and 2-8 of the EIS.

HOWARD J. WHITAKER
2041 Campton Circle
Gold River, CA 95670-8301
Phone: 916-852-8990 Fax: 916-852-7211 Email: HWhita@aol.com

20 December 1997

Commanding Officer
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

RE: F/A-18E/F West Coast Siting DEIS

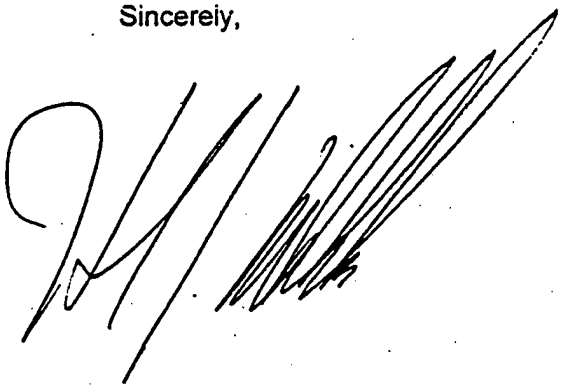
The DEIS contains a significant omission, as it focuses only on airspace/environmental consequences in the vicinity of the possible basing sites, NAS's Lemoore and El Centro.

The increased number of aircraft proposed to be based in California, mean an increased need for training flights transiting interior California and Nevada, specifically the Sierra Nevada mountains of California and the desert areas of California and Nevada. These mountains and deserts contain large areas of federally-legislated wilderness, wilderness study areas, national parks and reserves; areas for recreation and wildlife habitat which are presently adversely impacted by unauthorized, low-level flights by both Navy and USAF high-performance combat aircraft. This unauthorized activity is incredibly disturbing to recreationists who are in these special areas seeking quiet and escape (which is one of the purposes for which Congress created such areas), and may also present safety risks in winter to backcountry skiers in the Sierra Nevada, by the sound waves of low-level passes triggering avalanches in snowpack which is often only marginally stable. Additionally, all these special areas are intended as sanctuary for wildlife, and the roar of low-level passes is terrifying and disruptive to their life-cycles. 37-A

Unless the Navy can somehow solve the command and control problem whereby pilots, even though forbidden to do so, feel free to submit to the thrill of low-level passes through mountain and over desert areas, the proposed augmentation of 164 additional aircraft can only exacerbate an existing, ongoing, problem. 37-B

The Navy needs to expand its analysis beyond NAS's Lemoore and El Centro, and address how it intends to deal with this problem.

Sincerely,



- Letter 37 –
Howard J. Whitaker
Response to Comments

37-A Please see the response to comment 2-D regarding violations of altitude restrictions above national parks and wilderness areas, the response to comment 2-E for a discussion of safety concerns, the response to comment 2-F regarding potential noise effects of the proposed action on national parks and wilderness areas, and the response to comment 16-C for a discussion of pressure fluctuations from aircraft noise. Potential effects of the proposed action on biological resources is discussed in Section 4.8 of the EIS and also in the responses to comments 3-A, 3-B, 3-C, and 3-D.

37-B Please see the response to comment 2-D concerning violations of altitude restrictions above national parks and wilderness areas.

Commanding Officer
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066

Attn: Mr. Surinder Sikand, Environmental Planning Branch, Code 70311

Dear Mr. Sikand,

I am writing to comment on the "DEIS for the location of F/A-18 aircraft on the West Coast." As I understand it, the Air Force is proposing to increase flights over the central/southern Sierra Nevada from Lemoore NAS, including over Kings Canyon and Sequoia National Parks, and several wilderness areas. The Navy needs to recognize and acknowledge problems caused by these flights.

In my opinion, more flights over the Sierra are a bad idea. As a frequent utilizer of these areas, I have had some bad experiences with military overflights in Sierra National Park and wilderness areas. The shattering noise and startling appearance of Navy jets over these natural areas is inimical to the wilderness experience. We have observed F-117 "Stealth" fighters cruising through mountain valleys, below the ridge lines, spreading sonic booms and jet engine noise through the canyons, sending birds and mammals scurrying for cover and even causing fish visible in lakes to disappear. We have observed on numerous occasions other military aircraft flying at unreasonably low altitudes, shattering the peace and quiet one goes into the wilderness to enjoy. Commercial jets fly much higher, leaving con trails but making no discernible noise; I don't see why the Navy, Air Force, etc., cannot do the same. If it hasn't happened yet (I have heard that it has but cannot confirm it), it is just a matter of time until one of these jets crashes into a wilderness or park. These military overflights definitely adversely effect the wilderness experience and have a very real impact on the purpose and goals of having designated wildernesses. I know I certainly jump when jets suddenly appear over a ridge, followed by the incredible noise. 38-A

The Navy needs to recognize these problems, acknowledge that additional flights will exacerbate the problems, and come up with mitigative measures to lessen the impacts of current practices and any additional flights in the future. I would like written acknowledgement that you have received my letter and are taking these concerns into consideration. 38-B

cordially yours,

Matthew R. Clark
P.O. Box 652
El Granada, CA 94018

- Letter 38 –
Matthew R. Clark
Response to Comments

38-A Please see the response to comment 2-M regarding raising the minimum flight level for military aircraft flying above the Sierra Nevada Mountains. Also, please see the response to comment 2-E for a discussion of potential noise effects on national park and wilderness areas from the proposed action.

38-B An analysis of potential effects of overflight on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS. Please see the response to comment 2-M for a discussion of measures that have been suggested by the National Park Service and others to alter flight operations.

Commanding Officer,
Engr. Field Activity West,
Naval Facilities Engr. Command,
900 Commodore Drive,
Sam Bruno, Ca. 94066-5006

January 21, 1998
Exeter, Calif.

Re: Environmental Impact -with Aircraft Flights.

Dear Sir:

This letter is being written to your command as a result of an article published in our local Visalia Times Delta Newspaper, dated Jan. 20, 1998, sent in by a Linda Mutch of Three Rivers, Calif and which is herewith enclosed.

We are WW II Veterans and we do not agree with this women's statements in her article and we most certainly do not find our military planes being detrimental to our environment or surroundings in the mountainous areas as stated. This women should be glad that these fly over aircraft are AMERICAN planes and not Russian or Chinese!!! 39-A

Thank you for listening to our viewpoint!

Sincerely,

Carl McInnes
Visalia, Ca.

Roland Dinsmoor
Exeter, Ca.

Marvin Coleman
Squaw Valley,Ca.

YOUR VIEWS

Alfonso Hernandez: Coverage was wrong

I don't know how much money inserting the Visalia Times-Delta could be to its readers. Having published the comments of the "mother" of Alfonso Hernandez (cop killer) and a photo of the punk taken with his younger sibling, to give his mother a platform to vent her "grief" and to report that she considered her son "harmless," was an insult to the community.

The only thing I would like to hear out of the mother's mouth is a guilty plea to being an accessory to murder.

As for the "touching" photo of the punk with his younger sibling, I'm not sure if this was an attempt to put some kind of "spin" on the story. But I would have preferred seeing a photo of the bullet-riddled body of the deceased on a slab at the morgue.

The only thing the public cares about is that the punk was a killer and now he's deservedly dead.

See you in ink. It's going to happen again.

TOM NEILL
Visalia

Sierra Nevada: Wilderness is violated

Imagine yourself perched on a Sierra peak, Mt. Langley perhaps, gazing out on views of Owens Valley and the White Mountains to the east and a wilderness of rugged peaks, sky-blue lakes, gnarled old pines and solitude all around you. Suddenly, you are startled by the searing roar of two military jets that seem to come from nowhere flying over the Sierra crest and sweeping toward the Kern River drainage. As they vanish, you are left feeling frustrated and angry — your wilderness experience has just been invaded.

Unfortunately, this is not an uncommon experience in the back-country wilderness of Sequoia and Kings Canyon National Parks. The area is a popular "fly-over" zone for military pilots from China Lake and Lemoore Naval Air Bases and Edwards Air Force Base. Sequoia and Kings Canyon national parks have received hundreds of complaints from Park staff have spent a great deal of time in the past two years communicating this problem to military commanders from local bases and from Washington, D.C. There seemed to be a willingness among some of these military staff to reduce the noise impacts on the Sierra Nevada wilderness.

Thus, it was surprising to see a recent draft environmental impact statement from the Department of the Navy stating that "a less than significant noise impact would result from increased aircraft operations at NAS Lemoore" and that "off-base uses generally would not be exposed to incompatible noise levels." (Lemoore Naval Base is the preferred alternative of two possible sites for increased flight training and receiving — which means 92 additional aircraft).

The document appears not to consider that "off-base land uses" include for many people a long-awaited wilderness vacation far away from the noise and stresses of civilization. Few wilderness users would find jets roaring overhead compatible with their wilderness experience, nor would they agree that more flights would add a "less than significant impact."

Solitude is one of the defining characteristics of wilderness. Military pilots can still practice low level flight without flying over wilderness. If you are concerned about this issue and would like to comment, written comments must be submitted by Jan. 26, 1998 to: Commanding Officer, Engineering Field Activity West, Naval Facilities Engineering Command, 900 Commodore Drive, San Bruno, CA 94066-5006. Attn: Mr. Surinder Sikand, Environmental Planning Branch, Code 70311. Or comments may be faxed to (650) 244-3206.

LINDA MUTCH
Three Rivers

- Letter 39 –
Carl McInnes, Roland Dinsmoor, and Marvin Coleman
Response to Comment

39-A Thank you for your interest in the proposed action; your comment is noted.

Frank & Marlene Bucy
395 Danielson Road
Santa Barbara, CA 93108

1/26/98

Commanding Officer
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006
Attn: Mr. Surinder Sikand, Environmental Planning Branch, Code 70311

RE: High Sierra Overflights

Dear Sir,

I am writing in response and disappointment with the DEIS for the location of F/A-18 Aircraft on the West Coast. My wife and I have spent considerable time in the High Sierra hiking. We travel for the serenity and beauty. On many occasions has this peaceful atmosphere been destroyed by F/A-18 and other Naval aircraft flying over Kings Canyon, the Kern Range, and Sequoia National Parks. The disruption is not a matter of seconds, but minutes as the jet engine noise is reverberated through the canyons. On one occasion my brother was 15 miles away. The jet was no more than 300ft above ground, flew over Chamberlain peak and continued down the other side. He stated as well the jet was extremely low and when the jet turned he could see the pilot. The High Sierra should not be used as a cruising ground for training the Naval pilots. 40-A 40-B

We feel the Navy needs to recognize the problems with overflights that currently exist. Also, the Navy needs to analyze and disclose how the addition of 92 fighter jets to its fleet at Lemoore NAS will exacerbate existing problems with overflights in the High Sierra. Lastly, the Navy should adopt measures to remedy the existing problems (or, at a minimum, to ensure that the current problems do not become worse). 40-C

Thank you for your time and consideration.

Sincerely,

Frank & Marlene Bucy

- Letter 40 –
Frank and Marlene Bucy
Response to Comments

40-A Please refer to Section 3.1, Land Use and Airspace, for a discussion of flights over sensitive areas, such as national parks and wilderness areas, and to Section 3.7, Noise, for an assessment of overflight noise events by the current F/A-18C/D aircraft at NAS Lemoore.

40-B Please see the response to comment 2-D regarding violations of altitude restrictions over national parks and wilderness areas. An analysis of current conditions and potential effects of overflight on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS.

40-C Please see the response to comment 2-M regarding measures to address concerns about overflight of national parks and wilderness areas, and the response to comment 2-J for a discussion of implementing mitigations in airspace not under the Navy's direct control.

To: Commanding Officer, Engineering Field
Activity West, Naval Facilities Engineering Command, 900
Commodore Drive, San
Bruno, Ca 94066-5006.
Attn: Mr. Surinder Sikand
, Environmental Planning
Branch, Code 7031
Fax:650-244-3206

Dear Mr Silkand,

STOP flying over the wilderness. People have to put up with enough noise disruptions when they are in the cities. When I am in the wilderness, I want to hear the birds and the sounds from nature, not the horrifying sounds of jets flying over my head. Those sounds are horrendous and a violation of my health and peace. Go fly over military bases if you want to but leave people who want to enjoy nature alone. 41-A

Thank you

Florence Lesur
Manager, AT&T Language Line services
125 Laurel Dr
Carmel Valley, CA 93924

- Letter 41 –
Florence Lesur
Response to Comment

41-A Please see the response to comment 2-F for a discussion of noise and national parks and wilderness areas. All airspaces that would be used by F/A-18E/F aircraft are designated by the DOD and the FAA for military use.

PUBLIC HEARING ON THE DEIS FOR DEVELOPMENT OF FACILITIES TO SUPPORT BASING F/A-18 AIRCRAFT ON THE WEST COAST OF THE UNITED STATES
DNESDAY, JANUARY 7, 1998, LEMOORE, CALIFORNIA
SPEAKER REGISTRATION/COMMENT CARD

Please check your affiliation below:

- ___ Individual (no affiliation)
- _/_ Private Organization
- ___ Federal, State, or Local Government
- ___ Citizen's Group
- ___ Elected Representative
- ___ Regulatory Agency

Name: Rick Clark
Organization (if applicable): Back Country Horsemen of Calif
Street Address (optional): 651 So. Cornelia
City/State/Zip (optional): Exeter CA 93221
Phone # (optional): (209) 592-0239

Do you wish to speak this evening? ☐ **Yes** ☐ **No**

If you wish to provide written comments only, please write your comments below and turn them in at this meeting. Thank you.

Comments:

I want to thank you for the opportunity for our group of Kern Canyon users to be heard. As you could see by the comments of the speakers but one, low level flights in the Kern River Canyon is a serious problem that needs to be addressed before more jets are brought into the area. 42-A

Thanks again for listening to the problem and comments.

Turn in tonight or fold, add postage, and mail to the address on the back of this card by February 2, 1998.

- Letter 42 –
Rick Clark
Response to Comment

42-A Please see the response to comment 2-D concerning measures to curtail violations of altitude restrictions over national parks and wilderness areas.

Commanding Officer
Naval Facilities Engineering
900 Commodore Dr.
ATTN: Mr. Surinder Sikand
Code 70311
re: DEIS for location of FA-18
on the west coast

Dear Mr. Sikand,

I am an advocate of wilderness areas in the Sierra Nevada Mts. of California. In recent years I have noticed the noise levels created by military aircraft over such areas on the increase, and subsequently, detracting from the experience one hopes to find by visiting such places. Last year, in particular, the southern Sierra seemed to be under attack by nonstop F-18's flying low over Sequoia National Park. I am requesting that the military recognize that there is a problem and take measures to alleviate such a problem. Now, I understand that Lemoore NAS proposes to increase the current fleet of F-18 fighter jets by 92 aircraft. This is an appalling development in light of the current state of affairs in the skies over our so-called wilderness areas. As a U.S. taxpayer I am requesting that the military not allow an increase of F-18 jets in any military installation in the state of California, and additionally, take appropriate measures to insure that noise levels of any kind in the skies over wilderness areas are eliminated. 43-A 43-B 43-C

Thank you for your time. I will anxiously be awaiting a solution to the problem and an appropriate return of serenity to our wilderness.

Sincerely,

MATT YOKSH
6129 KERRY AVE
CHEYENNE, WY 82009

- Letter 43 –
Matt Yoksh
Response to Comments

43-A An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS. Also please see the response to comment 2-D concerning measures to curtail violations of altitude restrictions over national parks and wilderness areas.

43-B Comment is noted.

43-C Please see the response to comment 2-F for a discussion of potential noise effects of the proposed action on national parks and wilderness areas and the response to comment 2-M regarding measures considered by the Navy to address overflight concerns.

Commanding Officer
Naval Facilities Engineering Command
San Bruno, CA

January 20, 1998

Dear Sir,

The U.S. Navy recently released a draft plan to increase the F-18 fighter fleet at Lemoore NAS. The Navy has yet to evaluate what effects the present fleet has on wildlife and the users of Sequoia and Kings Canyon National Parks. The Navy must address this issue and assess the impact of an enlarged fleet would have on these wild areas. I would hope that the Navy would find a less sensitive and less used area over which to route future flights. 44-A

Sincerely,

Frank A. Junga
PO Box 164,
Cobalt, CT 06414

- Letter 44 –
Frank A. Junga
Response to Comment

44-A Please see the response to comment 2-F for a discussion of potential noise effects of the proposed action on national parks and wilderness areas. Potential effects of the proposed action on biological resources are discussed in Section 4.8, Biological Resources, of the EIS and in the responses to comments 3-A, 3-B, 3-C, and 3-D.

18 January 1998

Commanding Officer
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 94066-5006
Attention: Mr. Surinder Sikand, Environmental Planning Branch, Code 70311

Dear Sir:

Subject: DEIS for the location of F/A-18 aircraft on the West Coast.

It has come to my attention that the Navy plans to increase the F/A-18 fighter jet fleet at Lemoore NAS by 92 aircraft. I am concerned about the impact that this will have on overflight activity in the southern Sierra Nevada.

In the late 1980s and early 1990s, I was a backcountry ranger stationed along the Sierra Crest in Sequoia National Park. I spent entire summers hiking along the Crest and all through the Upper Kern River drainage, and I clearly remember the military air traffic in the area. On numerous occasions, military jets flew up the Kern Canyon below the level of the surrounding plateaux. Several times when I was patrolling along the crest — including on Mt. Whitney — military jets circled only a few hundred feet above the peaks on which other hikers and I were standing. The noise created by these jets was deafening.

I understand that the military does not condone these low-level flights above wilderness areas in the Sierra, and it is certainly true that low-level flights were not everyday occurrences. However, military jets did fly overhead at higher altitudes virtually every day, at all times of the day. They flew back and forth in an east-west path, and many times I watched them playing in dog-fights along the way. I must say that even when flying at altitudes higher than 3,000 feet above ground level their prolonged rumble and roar were very annoying. 45-A

The disturbances in wilderness areas created by military overflights is clearly a problem that the Navy must recognize and address — at both existing and increased overflight levels. We need to find solutions to the problem before more aircraft take to the air above this wilderness area. 45-B

Sincerely,



Paul Atkinson
P.O. Box 81488
Fairbanks, Alaska 99708-1488

- Letter 45 –
Paul Atkinson
Response to Comments

45-A Please see the response to comment 2-D regarding efforts to curtail violations of altitude restrictions and the response to comment 2-F for a discussion of potential noise effects of the proposed action on national parks and wilderness areas.

45-B Please see the response to comment 2-M for a discussion of measures suggested to the Navy to address overflight concerns and the response to comment 2-J concerning measures being taken by the Navy to address concerns about noise in national parks and wilderness areas.

Commanding Officer

Naval Facilities Engineering Command

900 Commodore Drive

San Bruno, Ca, 94066-5006

Attn: Mr. Surinder, Environmental Pllanning Branch, Code 70311

Dear Commanding Officer and Staff:

I am writting concerning the DEIS for adding 92-FA-18's to the fleet at Le Moore Naval Air Base,and the problem that present and additional military jets present in the wilderness of the high Sierra and particularily the eastern boundary of Sequoia National Park.

I have been a recreational backpacker in the southern Sierra since 1970 and have hiked, camped and climbed in this area every year since. The area contains some of the finest backcountry in the United States, with well known trails such as The John Muir Trail, The Pacific Crest Tra. and The High Sierra Trail. People come from all over the world to hike in and experience the beauty of this wilderness and also to climb Mt Whitney, 14,495, Highest peak in the contigious United States.

This Trek into the wilderness is more than just going camping, it is a religious experience where one can take a break from the hectic fast paced modern world and have a chance to get in touch with the deeper meanings of life. For reasons like this or very similar ones is why many people travel in the wilderness.

It has been my and others experience that the only interference with the "wilderness experience " in the area mentioned is the presence of military jets. A friend of mine said it best" Sequoia -Kings Cyn. National Park , south of Kearsarge , no longer sustains a wilderness experience due to persence of low flying military aircraft".

46-A

This was true 15 years ago and even more true today because of the increases in the number of flights . Their presence is not only distracting from ones wilderness experience but also disturbing to ones peace of mind and safety.

I have talked to many hikers who are outraged because of the consta military jet noise in this area, especially in the area around Mt. Whitney and over Mt. Whitney itself. Hikers are amazed at the calleousn that these pilots and their superiors have. 46-B

Myself and three others were nearly killed once near the top of the Mountaineers route when a large chunk of ice fell and nearly knocked us off the mountain. It happened as a loud jet was flying very nearby, we felt the rocks vibrate and then about 100 pounds of ice just missed us. Once I observed a mother complaining to a park ranger because after being startled by a jet her daughter nearly lept off the Mt. Whitney tr to her death. I have witnessed and heard of many other dangerous situat due to these jets. 46-C

I have complained to field and administrative rangers and they all say the same thing" we complain and nothin ever happens." Seems to me t the military is breaking the law because no motor vehicles are allowed in the backcountry, disturbing the peace and not observing quiet hours is also not allowed and to take it a little farther weapons are not all and these jets certainly are weapons. I just stated four reasons why an ordinary citizen would be cited in our national parks. Fortunatly these violations are rarely taking place by wilderness visitors. Most all users have a respectful attitude towards our National Parks and each other . Unfortunately however this is not the attitude of the mili establishment concerning jets in our national parks wilderness. 46-D

From the complaints I have heard throughout the mountains from backpackers, horsepackers and rangers it seems that these pilots and their supervisors do not care about those of us on the ground in our national parks. The military needs to recognize us and this problem. I am sure there are workable solutions for both sides. Perhaps the planes could go around or higher or avoid the area altogether during the backpacking season so that way those of us on the ground will not be plagued with this unwelcomed intrusion. 46-E

I feel that if you need to add 92 more jets for our national defense you should only do so by recognizing and solving the present problem. 46-F

The users of the wilderness and citizens of the surounding communit are voicing their complaints more than ever about the nuisances that these military jets cause. We all want the same thing ' a peaceful and s environment'and we will not cease to complain until something is done.

Respectfully Yours, Salvatore Castagnola

Salvatore Castagnola
1018 E. Gutierrez St.
Santa Barbara, Ca 93103

- Letter 46 –
Salvatore Castagnola
Response to Comments

46-A Please see the response to comment 2-D regarding efforts to curtail violations of altitude restrictions and the response to comment 2-F for a discussion of potential noise effects of the proposed action on national parks and wilderness areas.

46-B The Navy is actively pursuing programs to curtail violations of flight restrictions. Please see the response to comment 2-D concerning this issue.

46-C As discussed in the response to comment 16-C, sound from aircraft does not generate significant pressure fluctuations capable of dislodging ice or rock. Safety of recreationists below military overflight areas is of primary concern to the Navy. Please see the response to comment 2-E concerning this issue.

46-D Aircraft crossing the Sierra between NAS Lemoore and the R-2508 Complex travel only along FAA-designated routes and must remain at least 3,000 feet AGL. Within the R-2508 Complex, military overflight must occur at least 3,000 feet AGL over national park and wilderness areas designated by the *R-2508 User's Handbook* (see discussion added to Section 3.1, Land Use and Airspace).

46-E Suggested changes to overflight patterns considered by the Navy are discussed in the response to comment 2-M.

46-F Measures are on-going to address concerns over low-level overflights and overflights within FAA-approved routes. Please see the responses to comments 2-D and 2-J concerning measures to curtail low-level overflights and measures to alleviate noise effects on park users. Text also has been added to Section 3.1 of the final EIS to address the current conditions in national park and wilderness areas with regard to military overflights.

Commanding Officer
Naval Facilities Engineering
900 Commodore Dr.
ATTN: Mr. Surinder Sikand
Code 70311
re: DEIS for location of FA-18
on the west coast

Dear Mr. Sikand,

I am an advocate of wilderness areas in the Sierra Nevada Mts. of California. In recent years I have noticed the noise levels created by military aircraft over such areas on the increase, and subsequently, detracting from the experience one hopes to find by visiting such places. Last year, in particular, the southern Sierra seemed to be under attack by nonstop F-18's flying low over Sequoia National Park. I am requesting that the military recognize that there is a problem and take measures to alleviate such a problem. Now, I understand that Lemoore NAS proposes to increase the current fleet of F-18 fighter jets by 92 aircraft. This is an appalling development in light of the current state of affairs in the skies over our so-called wilderness areas. As a U.S. taxpayer I am requesting that the military not allow an increase of F-18 jets in any military installation in the state of California, and additionally, take appropriate measures to insure that noise levels of any kind in the skies over wilderness areas are eliminated. 47-A 47-B 47-C

Thank you for your time. I will anxiously be awaiting a solution to the problem and an appropriate return of serenity to our wilderness.

Sincerely,

Julie Martinez
PO Box 475
Pagosa Springs CO 81147

- Letter 47 –
Julie Martinez
Response to Comments

47-A An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS. Also please see the response to comment 2-D concerning measures to curtail violations of altitude restrictions over national parks and wilderness areas.

47-B Comment is noted.

47-C Please see the response to comment 2-F for a discussion of potential noise effects of the proposed action on national parks and wilderness areas and the response to comment 2-M regarding measures considered by the Navy to address overflight concerns.

Commanding Officer
Naval Facilities Engineering
900 Commodore Dr.
ATTN: Mr. Surinder Sikand
Code 70311
re: DEIS for location of FA-18
on the west coast

Dear Mr. Sikand,

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Thank you for your time. I will anxiously be awaiting a solution to the problem and an appropriate return of serenity to our wilderness.

Sincerely,

Carter Edmiston
PO Box 751
South Fork CO 81154

- Letter 48 –
Carter Edmiston
Response to Comments

48-A An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS. Also please see the response to comment 2-D concerning measures to curtail violations of altitude restrictions over national parks and wilderness areas.

48-B Comment is noted.

48-C Please see the response to comment 2-F for a discussion of potential noise effects of the proposed action on national parks and wilderness areas and the response to comment 2-M regarding measures considered by the Navy to address overflight concerns.

Commanding Officer
Naval Facilities Engineering
900 Commodore Dr.
ATTN: Mr. Surinder Sikand
Code 70311
re: DEIS for location of FA-18
on the west coast

Dear Mr. Sikand,

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Thank you for your time. I will anxiously be awaiting a solution to the problem and an appropriate return of serenity to our wilderness.

Sincerely,

R. Scott Lamb
P.O. Box 659
Creede, CO
81130

- Letter 49 –
R. Scott Lamb
Response to Comments

49-A An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS. Also please see the response to comment 2-D concerning measures to curtail violations of altitude restrictions over national parks and wilderness areas.

49-B Comment is noted.

49-C Please see the response to comment 2-F for a discussion of potential noise effects of the proposed action on national parks and wilderness areas and the response to comment 2-M regarding measures considered by the Navy to address overflight concerns.

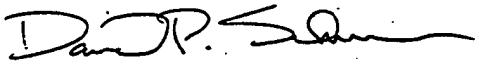
Commanding Officer
Naval Facilities Engineering
900 Commodore Dr.
ATTN: Mr. Surinder Sikand
Code 70311
re: DEIS for location of FA-18
on the west coast

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Thank you for your time. I will anxiously be awaiting a solution to the problem and an appropriate return of serenity to our wilderness.

Sincerely,



- Letter 50 –
David P. Sanderson
Response to Comments

50-A An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS. Also please see the response to comment 2-D concerning measures to curtail violations of altitude restrictions over national parks and wilderness areas.

50-B Comment is noted.

50-C Please see the response to comment 2-F for a discussion of potential noise effects of the proposed action on national parks and wilderness areas and the response to comment 2-M regarding measures considered by the Navy to address overflight concerns.

Commanding Officer
Naval Facilities Engineering
900 Commodore Dr.
ATTN: Mr. Surinder Sikand
Code 70311
re: DEIS for location of FA-18
on the west coast

Dear Mr. Sikand,

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Thank you for your time. I will anxiously be awaiting a solution to the problem and an appropriate return of serenity to our wilderness.

Sincerely,

Michael Scott Kay
1827 South DeFrame St.
Lakewood, Colorado
80228

Gulf War Vet.
USMC.

- Letter 51 –
Richard Scott Kay
Response to Comments

51-A An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS. Also please see the response to comment 2-D concerning measures to curtail violations of altitude restrictions over national parks and wilderness areas.

51-B Comment is noted.

51-C Please see the response to comment 2-F for a discussion of potential noise effects of the proposed action on national parks and wilderness areas and the response to comment 2-M regarding measures considered by the Navy to address overflight concerns.

Commanding Officer
Naval Facilities Engineering
900 Commodore Dr.
ATTN: Mr. Surinder Sikand
Code 70311
re: DEIS for location of FA-18
on the west coast

Dear Mr. Sikand,

I am an advocate of wilderness areas in the Sierra Nevada Mts. of California. In recent years I have noticed the noise levels created by military aircraft over such areas on the increase, and subsequently, detracting from the experience one hopes to find by visiting such places. Last year, in particular, the southern Sierra seemed to be under attack by nonstop F-18's flying low over Sequoia National Park. I am requesting that the military recognize that there is a problem and take measures to alleviate such a problem. Now, I understand that Lemoore NAS proposes to increase the current fleet of F-18 fighter jets by 92 aircraft. This is an appalling development in light of the current state of affairs in the skies over our so-called wilderness areas. As a U.S. taxpayer I am requesting that the military not allow an increase of F-18 jets in any military installation in the state of California, and additionally, take appropriate measures to insure that noise levels of any kind in the skies over wilderness areas are eliminated. 52-A 52-B 52-C

Thank you for your time. I will anxiously be awaiting a solution to the problem and an appropriate return of serenity to our wilderness.

Sincerely,

I live just off U.S. Highway 160, where it crosses Wolf Creek Pass in Southern Colorado. The air force occasionally conducts very low level training missions, with C-130 combat transports, which fly directly over my house. I assume that for various reasons, Wolf Creek Pass is an ideal location to conduct these training missions. These missions disturb the tranquility of our home and I assume there is some slight danger to persons on the ground. In spite of this, My wife and I are proud to make a small contribution to national defense by being supportive of these missions and the brave individuals who conduct them. However, when there are alternative locations, as I believe there are in the case of F-18 training flights over Sequoia National Park, these alternative sights should in every case be utilized. 52-D

Sincerely,

[illegible] Elk CO 8115

- Letter 52 –
Robert M. Owens
Response to Comments

52-A An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS. Also please see the response to comment 2-D concerning measures to curtail violations of altitude restrictions over national parks and wilderness areas.

52-B Comment is noted.

52-C Please see the response to comment 2-F for a discussion of potential noise effects of the proposed action on national parks and wilderness areas and the response to comment 2-M regarding measures considered by the Navy to address overflight concerns.

52-D Training missions must be conducted in proximity to the home base for the F/A-18E/F aircraft. As stated in Section 1.2 of the final EIS, the F/A-18E/F aircraft must be based on the West Coast. West Coast alternatives eliminated from consideration are discussed in Section 2.4 of the EIS. As discussed in the response to comment 2-M, there are no alternatives to the R-2508 Complex for training, nor are there any other means by which aircraft from NAS Lemoore can reach the R-2508 Complex.

Commanding Officer
Naval Facilities Engineering
900 Commodore Dr.
ATTN: Mr. Surinder Sikand
Code 70311
re: DEIS for location of FA-18
on the west coast

Dear Mr. Sikand,

I am an advocate of wilderness areas in the Sierra Nevada Mts. of California. In recent years I have noticed the noise levels created by military aircraft over such areas on the increase, and subsequently, detracting from the experience one hopes to find by visiting such places. Last year, in particular, the southern Sierra seemed to be under attack by nonstop F-18's flying low over Sequoia National Park. I am requesting that the military recognize that there is a problem and take measures to alleviate such a problem. Now, I understand that Lemoore NAS proposes to increase the current fleet of F-18 fighter jets by 92 aircraft. This is an appalling development in light of the current state of affairs in the skies over our so-called wilderness areas. As a U.S. taxpayer I am requesting that the military not allow an increase of F-18 jets in any military installation in the state of California, and additionally, take appropriate measures to insure that noise levels of any kind in the skies over wilderness areas are eliminated. 53-A 53-B 53-C

Thank you for your time. I will anxiously be awaiting a solution to the problem and an appropriate return of serenity to our wilderness.

Sincerely,

Joseph M Maloney

JOSEPH. M. MALONEY
332 S. LOCUST
APPLETON, WI. 54914

- Letter 53 –
Joseph M. Maloney
Response to Comments

53-A An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS. Also please see the response to comment 2-D concerning measures to curtail violations of altitude restrictions over national parks and wilderness areas.

53-B Comment is noted.

53-C Please see the response to comment 2-F for a discussion of potential noise effects of the proposed action on national parks and wilderness areas and the response to comment 2-M regarding measures considered by the Navy to address overflight concerns.

Letter 54

January 23, 19

Dear Mr. Sikand:

On the night of August 28, 1997, I was terrified out of my sleep at approximately 11 p.m. by a military jet flying over the Crabtree Meadows area of Sequoia National Park. After the jet succeeded in awakening all of the campers in the area, it proceeded to fly over Mt. Whitney, barely clearing it by a conservative estimate of several hundred feet.

This was not my initial experience with the noise from military jets reverberating throughout the Park. I have backpacked there numerous times throughout the last two decades, my peace and solitude shattered by the aforementioned jets during many of these occasions.

It is from the personal experiences I have shared above, as well as my concern for fellow wilderness users, that I wish to comment on the Draft EIS for the location of FA18 aircraft on the West Coast, and particularly over the Central-

Southern Sierra Nevada

It has recently come to my attention that the military plans to add 92 F18 aircraft to its fleet and that these models will be even louder than those currently utilized. It is appalling to me that the noise from existing aircraft has been allowed up to this point to desecrate the wilderness I consider holy. In addition, I believe that the startling noise generated by these aircraft has the ability to cause accidents among climbers and pack animals. But most importantly, it has the ability to negatively affect wild animal behavior and several species of animals resident to this area of the Sierra Nevada including the bighorn sheep, are in a precarious enough situation as is. Clearly the military either does not recognize the current noise generated by its aircraft as problematic or in its arrogance it has decided to disregard the problem altogether

54-A

Mr. Sikand, I am sure you are a reasonable man. Therefore, I

would like to propose that you honestly and adequately disclose to the public the impacts that current aircraft have and that additional flights will have on our wilderness areas. In addition, you should disclose exactly how you intend to mitigate these impacts. I suggest the following as potential mitigation measures: require aircraft to fly at minimum altitudes which are much higher than any current standards which may be in effect or, more preferably, remove Sequoia National Park and surrounding areas from military aircraft exercises altogether. flight

54-B

54-C

While you have the chance, I urge you to do what is right in terms of evaluating current and future military aircraft activity over the Central Southern Sierra Nevada. Not only is it your job, but it is your responsibility to the American people.

Sincerely,
Katherine
Korolay

- Letter 54 –
Katherine Korotaj
Response to Comments

54-A The safety of park users is very important to the Navy and, as discussed in the response to comment 2-E, training operations are conducted only in designated areas. Procedures have been established for curtailing low-level flights, as discussed in the response to comment 2-D, and disciplinary measures may be pursued for any low-level flight in violation of altitude restrictions that is confirmed by the CCF. Please see the response to comment 3-B concerning the California bighorn sheep. An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS.

54-B An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS. No significant noise impacts to sensitive resource areas from the proposed action have been identified in the EIS. Please see also the responses to comments 2-M and 2-J regarding changes to overflight patterns considered by the Navy and current steps by the Navy to understand the effects of aircraft noise on national park and wilderness users.

54-C Please see the response to comment 2-M concerning changes to minimum operating altitudes. No military training exercises are conducted above Sequoia National Park by aircraft in transit from NAS Lemoore to the R-2508 Complex. While conducting training exercises within the R-2508 Complex, aircraft are required by the *R-2508 User's Handbook* (see Appendix H) to maintain a minimum 3,000-foot AGL over Sequoia National Park. Any changes to operations within R-2508, such as removal of Sequoia National Park from the military operations area, would require DOD and FAA review and approval.

Commanding Officer
Naval Facilities Engineering
900 Commodore Dr.
ATTN: Mr. Surinder Sikand
Code 70311
re: DEIS for location of FA-18
on the west coast

Dear Mr. Sikand,

I am an advocate of wilderness areas in the Sierra Nevada Mts. of California. In recent years I have noticed the noise levels created by military aircraft over such areas on the increase, and subsequently, detracting from the experience one hopes to find by visiting such places. Last year, in particular, the southern Sierra seemed to be under attack by nonstop F-18's flying low over Sequoia National Park. I am requesting that the military recognize that there is a problem and take measures to alleviate such a problem. Now, I understand that Lemoore NAS proposes to increase the current fleet of F-18 fighter jets by 92 aircraft. This is an appalling development in light of the current state of affairs in the skies over our so-called wilderness areas. As a U.S. taxpayer I am requesting that the military not allow an increase of F-18 jets in any military installation in the state of California, and additionally, take appropriate measures to insure that noise levels of any kind in the skies over wilderness areas are eliminated. 55-A 55-B 55 C

Thank you for your time. I will anxiously be awaiting a solution to the problem and an appropriate return of serenity to our wilderness.

Sincerely,

JONATHAN HANGER
PO Box 50527
TULSA OK 74150

- Letter 55 –
Jonathan Haner
Response to Comments

55-A An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS. Also please see the response to comment 2-D concerning measures to curtail violations of altitude restrictions over national parks and wilderness areas.

55-B Comment is noted.

55-C Please see the response to comment 2-F for a discussion of potential noise effects of the proposed action on national parks and wilderness areas and the response to comment 2-M regarding measures considered by the Navy to address overflight concerns.

Commanding Officer
Naval Facilities Engineering
900 Commodore Dr.
ATTN: Mr. Surinder Sikand
Code 70311
re: DEIS for location of FA-18
on the west coast

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Thank you for your time. I will anxiously be awaiting a solution to the problem and an appropriate return of serenity to our wilderness.

Sincerely,

Anthony Doctor

970-264-6122

- Letter 56 –
Anthony Doetor
Response to Comments

56-A An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS. Also please see the response to comment 2-D concerning measures to curtail violations of altitude restrictions over national parks and wilderness areas.

56-B Comment is noted.

56-C Please see the response to comment 2-F for a discussion of potential noise effects of the proposed action on national parks and wilderness areas and the response to comment 2-M regarding measures considered by the Navy to address overflight concerns.

Commanding Officer
Naval Facilities Engineering
900 Commodore Dr.
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I am an advocate of wilderness areas in the Sierra Nevada Mts. of California. In recent years I have noticed the noise levels created by military aircraft over such areas on the increase, and subsequently, detracting from the experience one hopes to find by visiting such places. Last year, in particular, the southern Sierra seemed to be under attack by nonstop F-18's flying low over Sequoia National Park. I am requesting that the military recognize that there is a problem and take measures to alleviate such a problem. Now, I understand that Lemoore NAS proposes to increase the current fleet of F-18 fighter jets by 92 aircraft. This is an appalling development in light of the current state of affairs in the skies over our so-called wilderness areas. As a U.S. taxpayer I am requesting that the military not allow an increase of F-18 jets in any military installation in the state of California, and additionally, take appropriate measures to insure that noise levels of any kind in the skies over wilderness areas are eliminated. 57-A 57-B 57-C

Thank you for your time. I will anxiously be awaiting a solution to the problem and an appropriate return of serenity to our wilderness.

Sincerely,

Steven G. Holdrege

Steven G Holdrege
P.O. Box 5863
Pagosa Springs, CO
81147

- Letter 57 –
Steven G. Holdrege
Response to Comments

57-A An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS. Also please see the response to comment 2-D concerning measures to curtail violations of altitude restrictions over national parks and wilderness areas.

57-B Comment is noted.

57-C Please see the response to comment 2-F for a discussion of potential noise effects of the proposed action on national parks and wilderness areas and the response to comment 2-M regarding measures considered by the Navy to address overflight concerns.

2-27-98

Ms Surinder Sidhand

We dont need or want anymore of your noisy planes send them some where else

58-A

Bruno Giannini
Emma Giannini

P.O. Box 651
1745 Rio Vista
Leeley Ca.
92273-0651

- Letter 58 –
Bruno and Emma Giannini
Response to Comment

58-A The alternatives considered are presented in Section 2.4 of the EIS.

Letter 59

Commanding Officer
Naval Facilities Engineeri
900 Commodore Dr.
Attn: Mr. Surinder Sikand
code 70311
RE: DEIS for location
of FA-18 on West coa

Dear Mr. Sikand,

I am an avid backpacker who has spent numerous summers exploring our nations "wilderness" areas, whether it be Yellowstone country, the desert southwest, or the Appalachians. But, my favorite remains the mountains of the southern Sierra. Unfortunately, of the thousands of miles that I have traveled on foot, the backcountry of Sequoia and Kings Canyon rarely reminds me of true wilderness. Why? Because of the constant reminder of civilization. The sound I least associate with true "freedom." The sound of an FA-18 buzzing above me at 3,000 feet. The sound of an FA-16 buzzing at 800 feet. The roar of three FA-14's echoing at 100 feet below me in the Kern canyon. 59-A

Try to picture how loud any military personnel has to shout when communicating at a naval base. It can almost be this difficult within the backcountry these days. My husband and my most recent habits involve the common breaks in conversation as these planes pass overhead. It is regrettable that it has come to this. This of course, coupled with the countless instances where I have almost lost footing or grips on precarious peaks due to this distraction. Even the long nights don't offer a peaceful nights sleep. Nevermind that the true inhabitants

of this country dont have a voice against this incessant intrusion.

The Navy needs to recognize that these overflights indeed exist and are a serous problem. It was fortunate/unfortunate enough to hear about the absurd proposal of adding 92 fighter jets to its fleet at Lemoore. As always, the government doesnt seem to have the courtesy or courage to advertise these decisions "...for the people, by the people?!" (usually because they are controversial). Until the current intrusion into the backcountry is eliminated, which it hasnt been in decades, the Navy should not be allowed any more planes or flights over the airspace of our wilderness areas. 59-B

Sincerely,

Laura G. Pilewski

Laura A. Pilewski
PO Box 4351
Pagosa Springs, CO
81147

- Letter 59 –
Laura G. Pilewski
Response to Comment

59-A Please see the response to comment 2-D concerning measures to curtail violations of altitude restrictions and the response to comment 2-F for a discussion of noise potential effects on national parks and wilderness areas.

59-B An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS.

Commanding Officer
Naval Facilities Engineering
900 Commodore Dr.
ATTN: Mr. Surinder Sikand
Code 70311
re: DEIS for location of FA-18
on the west coast

Dear Mr. Sikand,

I am an advocate of wilderness areas in the Sierra Nevada Mts. of California. In recent years I have noticed the noise levels created by military aircraft over such areas on the increase, and subsequently, detracting from the experience one hopes to find by visiting such places. Last year, in particular, the southern Sierra seemed to be under attack by nonstop F-18's flying low over Sequoia National Park. I am requesting that the military recognize that there is a problem and take measures to alleviate such a problem. Now, I understand that Lemoore NAS proposes to increase the current fleet of F-18 fighter jets by 92 aircraft. This is an appalling development in light of the current state of affairs in the skies over our so-called wilderness areas. As a U.S. taxpayer I am requesting that the military not allow an increase of F-18 jets in any military installation in the state of California, and additionally, take appropriate measures to insure that noise levels of any kind in the skies over wilderness areas are eliminated. 60-A 60-B 60-C

Thank you for your time. I will anxiously be awaiting a solution to the problem and an appropriate return of serenity to our wilderness.

Sincerely,

Ron Scheemacher

Ron Scheemacher
1344 CR. 977
Allison, CO 81137
970-883-2410

- Letter 60 –
Ron Schermacher
Response to Comments

60-A An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS. Also please see the response to comment 2-D concerning measures to curtail violations of altitude restrictions over national parks and wilderness areas.

60-B Comment is noted.

60-C Please see the response to comment 2-F for a discussion of potential noise effects of the proposed action on national parks and wilderness areas and the response to comment 2-M regarding measures considered by the Navy to address overflight concerns.

Lynda Lahodny, Councilwoman
Lemoore City Council
210 Fox Street
Lemoore, California 93245

February 2, 1998

Commanding Officer
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Attention: Mr. Surinder Sikand
Environmental Planning Branch, Code 70311

As a Lemoore City Councilwoman, local business owner, and Lemoore Chamber of Commerce Board Member, I strongly favor locating The U.S. Pacific Fleet F/A-18E/F Aircraft at Lemoore Naval Air Station.

Lemoore Naval Air Station, because of its location, facilities, airspace and cooperative relationship with the adjacent community of Lemoore, should be the obvious choice of location.

If any environmental problems exist with locating the F/A-18 E/F squadrons at NAS Lemoore, I'm sure they can be resolved through cooperative efforts on the part of the Navy and the community. The economic vitality of Lemoore as well as Kings County is dependent upon our continued mutually supportive relationship with NAS Lemoore. 61-A

Thank you for your consideration.

Sincerely,

Lynda Lahodny

Lynda Lahodny
Lemoore City Councilwoman

- Letter 61 –
Lynda Lahodny
Response to Comment

61-A Thank you for your interest in the proposed action. Your support of the NAS Lemoore alternative is noted.

Letter 62

George Durkee
23807 Quaker Ln.
Twain Harte, CA 95383
209-586-1652
Gdurkee@sonnet.com

Commanding Officer
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006
Attn: Mr. Surinder Sikand, Environmental Planning Branch, Code 70311

January 26, 1998

Mr. Sikand:

I understand that Lemoore NAS is proposing to increase their fleet of FA-18's by about 90 aircraft and that a DEIS is being prepared. I am opposed to this increase of aircraft at Lemoore NAS. I spend a number of weeks per year hiking and climbing in both Joshua Tree and Sequoia and Kings Canyon National Parks and am outraged by the constant roar of low-flying aircraft over both parks. Although these aircraft are, according to the National Park Service, required to stay 3,000 ft. above ground level (AGL), a number of pilots--and specifically F-18's from, I assume, Lemoore--ignore that limit. I doubt I have spent more than a week in the upper Kern area of Sequoia Park without an F-18 flying low (less than 3,000 AGL) either up the canyon or across from the west side of the Sierra. This does not even include the 3 + flights per day that pairs seem to make in summer from west to east over the crest. This is unacceptable and the Navy has to both recognize the problem and deal with it.

I urge you to:

- Acknowledge in your EIS that wilderness overflights are a serious problem. 62-A
- Include in your EIS how the addition of these aircraft will exacerbate this problem. 62-B
- Propose and implement ways to reduce or eliminate the gross intrusion on wilderness caused by these overflights. I would specifically suggest either re-routing all traffic south of Sequoia National Park or, at the very least, requiring all aircraft to fly above 20,000 ft. *at a minimum.* Asking pilots to determine if they're closer than 3,000 ft. to ground level is not working and an absolute limit must be established. 62-C

Thank you for your attention in this matter.

Sincerely,

George Durkee

- Letter 62 –
George Durkee
Response to Comments

62-A The extent of the impact of military overflights on national parks is not well understood or quantified at the present time. The Navy is studying how aircraft noise is perceived by park visitors to determine the type of measures that can be taken to minimize any effects. Please see the response to comment 2-J regarding current actions by the Navy to address overflight concerns, and the response to comment 2-F regarding noise in park and wilderness areas from the proposed action.

62-B An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 4.1, Land Use and Airspace, and 4.7, Noise, of the final EIS.

62-C Please see the response to comment 2-M regarding suggested changes to flight patterns to address overflight concerns and the response to comment 2-D concerning measures to curtail violations of altitude restrictions.

January 26, 1998

Commanding Officer
Naval Facilities Engineering Command
900 Commodore Dr.
San Bruno, CA 94066-5006
ATT: Mr. Surinder Sikand, Environmental Planning Branch
Code 70311

RE: DEIS for the location of F/A 18 aircraft on West Coast

My husband and I were staying for one week at an Audubon Camp "Golden Trout" last August, 1997. The trailhead is Horseshoe Meadows. We were away from all the noise of the city. Golden Trout has no electricity, no telephones, and away from TV and newspapers. It's a wonderful experience. While hiking from Golden Trout at 11,000 feet a "boom" hits and scares all the hikers on the trail. We look up and see a fighter plane racing by. The boom and then the plane flying by really ruins the peaceful experience we are all looking for. Imagine how this seems to the wildlife! Imagine how this seems to the hikers!

We understand that the law, National Environmental Policy Act, simply requires that the Navy analyze and disclose the potential environmental consequences of increasing the F-18 fighter fleet by 92 jets. We understand the new F/A 18E/F aircraft will be even louder than those models currently in use and will "commute back and forth across the High Sierra from Lemoore, Calif. to training ranges in the Calif. desert and in the state of Nevada.

My husband and I feel the Navy should adopt measures to remedy the existing problems or, at a minimum, to ensure that the current problems do not become worse. 63-A

Sincerely,

Willis & Melba Simms

Willis & Melba Simms
6251 Jumilla Ave.
Woodland Hills, CA 91367

- Letter 63 –
Willis and Melba Simms
Response to Comment

63-A An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 4.1, Land Use and Airspace, and 4.7, Noise, of the final EIS. In addition, as discussed in the response to comment 2-J, the Navy is exploring ways to address the concerns of park users with regard to aircraft overflight.

NINA WEISMAN
306 CAMINO MANZANAS
THOUSAND OAKS, CA 91360
(805)495-0156

January 25, 1998

Commanding Officer
Naval Facilities Engineering Command
San Bruno, CA 94066-5006
Attn.: Mr. Surinder Sikand, Environmental Planning Branch,
Code 70311
Re: DEIS for the location of F/A-18 aircraft on the West Coast

I have recently heard that the U.S. Navy plans to add 92 F-18's to the fleet at Lemoore Naval Air Station. I am a very frequent visitor to the southern Sierra, including Sequoia/Kings Canyon National Parks, John Muir Wilderness Area, Sequoia National Forest, and Inyo National Forest. I have some serious concerns about this plan.

During the past 21 years that I have been enjoying the wonders of this area, I have had some very disturbing encounters with military aircraft. The noise these planes make, even when 3000 feet above the ground, is jarring and completely disrupts the quiet and solitude I go to the mountains to enjoy. I understand that military planes are supposed to stay above 3000' above ground level in the parks, but even this height isn't enough to disperse the sounds that echo off the mountainsides. Quite often, the planes are much lower, sometimes even buzzing the peaks. I have been on the summit of a peak and ducked for cover because a jet was so close. Three separate times I have witnessed fighter planes flying *below* me while I was hiking on a well-used trail. Besides being horrible noise pollution, these aircraft are also a safety issue. I witnessed a beginning rock climber fall off the rock when a jet flew overhead and caused a sudden loud noise and vibration. Horses will sometimes shy at loud noises and this can be quite serious on some narrow mountain trails. I don't know if any studies have been completed, but I imagine that the loud noises could have detrimental effects on the wildlife.

I have been disturbed for many years by these overflights and now I discover that they may soon increase. The Navy needs to recognize that these overflights are a serious problem. Also, an environmental impact study needs to be done to see how an additional 92 jets will affect the southern Sierra. The Navy has a responsibility to (1) ensure that existing problems don't worsen and if possible (2) rectify the current situation. How about moving overflights south or north to fly over an existing highway, or at least a much higher ceiling? 64-A

Thank you for your attention to this matter.

Sincerely,

Nina Weisman

Nina Weisman

- Letter 64 –
Nina Weisman
Response to Comment

64-A An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 4.1, Land Use and Airspace, and 4.7, Noise, of the final EIS. Please see the response to comment 2-D concerning measures to curtail violations of altitude restrictions, the response to comment 2-F for a discussion of potential noise effects in national parks and wilderness areas, and the response to comment 2-E with regard to safety issues. Potential impacts on biological species are addressed in Section 4.8 of the EIS and in the responses to comments 3-A, 3-B, 3-C, and 3-D. Please see the response to comment 2-M regarding suggested changes to flight operations.

P.O. Box 5584
Chico, CA 95927
Jan. 24, 1998

Commanding Officer
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006
Attn: Mr. Surinder Sikand, Environmental Planning Branch, Code 70311

Dear Mr. Sikand:

I am writing to comment on the DEIS for the location of F/A-18 aircraft on the West Coast. I am a hiker who has spent many years hiking and working in the Sequoia National Park area. I worked as a biologist and lived in the Sequoia National Park area during the late 1980's and the 1990's. I spent much of my time in the backcountry for both work and recreational hikes. During that time, our solitude was disturbed daily by low-flying military jets traveling over the park, and especially over the Kern River area. Not only were these flights extremely annoying, the sudden, loud noise of the jets was quite frightening. Biologists are also concerned that the noise from these low-level military flights is adversely affecting the severely endangered bighorn sheep in the Sierra.

The DEIS currently proposes the addition of 92 fighter jets to Lemoore NAS, which would fly routinely over the Sierra for training in the desert. Since problems with daily overflights in the Sierra already exist, how does the Navy propose to minimize the effects from an additional 92 fighter jets? These problems should be analyzed, and effects on the natural quiet, on wildlife, and safety issues with National Park Service flights need to be addressed. Alternatives for these flights should be explored and implemented. These include the possibility of flying over more developed areas of the Kern in the south, or flying at much higher elevations when traveling over NPS areas. These small changes in routes could minimize some of the existing problems. The Navy needs to remedy these problems that already exist, and make sure that the additional 92 jets don't cause more serious problems in these wilderness areas.

65-A
65-B
65-C

It appears that problems with wildlife and safety could be minimized, and that many people's once in a lifetime wilderness experience could be preserved by some relatively small changes in route. Thank you for your attention to the existing problems with overflights over the Sierra and analyzing the impact of the additional 92 jets.

Sincerely,

Elizabeth Hubert

Elizabeth Hubert

- Letter 65 –
Elizabeth Hubert
Response to Comments

65-A An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 4.1, Land Use and Airspace, and 4.7, Noise, of the final EIS. Please see the response to comment 2-D concerning measures to curtail violations of altitude restrictions, the response to comment 2-J for a discussion of ways the Navy is exploring to address the concerns of park users with regard to aircraft overflight.

65-B Please see the response to comment 25-Q for a discussion of natural quiet, the response to comment 3-B concerning the California bighorn sheep, and the response to comment 2-E regarding safety considerations.

65-C Please see the response to comment 2-M regarding suggested changes to flight routes over the Sierra.

Commanding Officer
Naval Facilities Engineering
900 Commodore Dr.
ATTN: Mr. Surinder Sikand
Code 70311
re: DEIS for location of FA-18
on the west coast

Dear Mr. Sikand,

I am an advocate of wilderness areas in the Sierra Nevada Mts. of California. In recent years I have noticed the noise levels created by military aircraft over such areas on the increase, and subsequently, detracting from the experience one hopes to find by visiting such places. Last year, in particular, the southern Sierra seemed to be under attack by nonstop F-18's flying low over Sequoia National Park. I am requesting that the military recognize that there is a problem and take measures to alleviate such a problem. Now, I understand that Lemoore NAS proposes to increase the current fleet of F-18 fighter jets by 92 aircraft. This is an appalling development in light of the current state of affairs in the skies over our so-called wilderness areas. As a U.S. taxpayer I am requesting that the military not allow an increase of F-18 jets in any military installation in the state of California, and additionally, take appropriate measures to insure that noise levels of any kind in the skies over wilderness areas are eliminated. 66-A 66-B 66-C

Thank you for your time. I will anxiously be awaiting a solution to the problem and an appropriate return of serenity to our wilderness.

Sincerely,

Guthrie Hadesty

Guthrie Hadesty
340 Ridge Rd.
Durango, Co. 81301

- Letter 66 –
Guthrie Hardesty
Response to Comments

66-A An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS. Also please see the response to comment 2-D concerning measures to curtail violations of altitude restrictions over national parks and wilderness areas.

66-B Comment is noted.

66-C Please see the response to comment 2-F for a discussion of potential noise effects of the proposed action on national parks and wilderness areas and the response to comment 2-M regarding measures considered by the Navy to address overflight concerns.

1095 Woodside Way
Del Mar, CA 92014
24 January, 1998

Commanding Officer
Naval Facility Engineeering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Att:Mr. Surinder Sikand
Environmental Planning Branch
Code 70311

Dear Sir:

I am writing to express my distress at the environmental impact on the High Sierras by overflights of an increasing number of jet aircraft from Lemoore Naval Air Station.

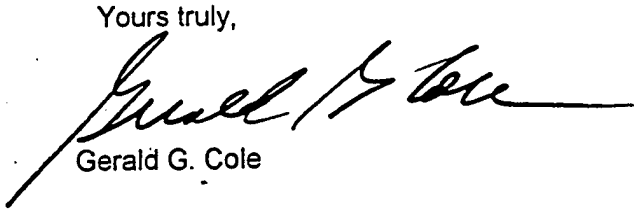
It is my understanding that close to 100 newly stationed fighter jets are installed at Lemoore, and that they will fly over some of the most pristine and wild portions of the High Sierras, and the National Parks and federally designated wilderness areas, en route to traininfg areas to the east. I can assure you that it is very disturbing to have the silence and aesthetic experience of a High Sierra outing shattered by the roar of jet engines. I believe that hikers, and especially horsemen, on a treacherous trail, can have an experience that is dangerous, when suddenly startled by a 120+ decibel roar. These are areas where even the noise of gunfire is prohibited. The absence of the noise of civilization is one of the essential features of a wilderness experience, and in the High Sierras is one of our most beautiful and uncivilized parts of our country. The National Parks and Forest Service understand the role of quietude in a back country experience.

It is my hope that everything possible will be done to ameliorate the impact of noise from jets on these regions. Perhaps these fighter planes could fly routes to the north or south of the highest Sierras, in corridors of air traffic more frequently traversed by commercial jets, and at altitudes and power settings that reduce ground noise effect. Military jet noise has an environmental impact, and the Navy must consider the increasing impact of a larger number of jets creating noise. The Navy must respond to this problem and address a remedy.. 67-A

I can remember watching these jets, when they took off from Miramar NAS, turning to the north for a few miles, before heading west; In so doing they avoided overflight of La Jolla and densely populated areas. Now they can devise routes where

overflight of quiet areas is equally important.

Yours truly,



Gerald G. Cole

- Letter 67 –
Gerald Cole
Response to Comment

67-A Please see the response to comment 2-M regarding changes to flight routes over the Sierra and the response to comment 2-E for a discussion of noise effects of the proposed action on national parks and wilderness areas.

P.O. Box 7720
South Lake Tahoe, CA 96158
February 1, 1998

Surinder Sikand, Code 18511
U.S. Navy, Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Dear Mr. Sikand:

Please accept these comments into the record for the DEIS regarding the proposed basing of F/A-18E/F aircraft at Lemoore Naval Air Station.

I am concerned about the impacts of the current level of military overflights on noise, safety, and wildlife in the national parks and wilderness areas over which Navy jets from Lemoore NAS routinely fly. Your EIS should evaluate the effects of the current level of overflights, and the Navy should modify its proposal and/or adopt mitigation measures to assure that the current impacts are reduced, not increased as a result of this proposal. 68-A

One potential impact that needs careful study are impacts on the Sierra Nevada bighorn sheep. As you will learn if you are in contact with the Park Service and other research scientists is that, because of the recently determined uniqueness of Sierra bighorn, which qualifies them as their own subspecies, they are now known to be one of the most endangered mammals in North America. Any activity that could adversely affect the Sierra Nevada bighorn sheep therefore must be avoided. 68-B

Please supplement your analysis to more thoroughly study the potential impacts of the Navy's proposal to increase military overflights of California's national parks and wilderness areas. Thank you for considering these comments.

Sincerely,

Alia Selke

- Letter 68 –
Alia Selke
Response to Comments

68-A An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS. Potential noise and safety impacts on users of national parks and wilderness are of concern to the Navy. As discussed in the response to comment 2-J, the Navy is trying to develop a better understanding of perceived noise by recreationists. Also, flight operations are limited to designated areas to ensure the safety of pilots and users of land beneath the training areas (see the response to comment 2-E).

68-B Please see the response to comment 3-B concerning the California bighorn sheep.

re: DEIS for location of FA-18 Aircraft on the West Coast

Commanding officer
Naval facilities Engineering command
900 Commodore Drive
ATTN. Mr. Surinder S. KAND
Code 70311

Dear Mr. Sikand,

My name is Bob Pilewski and I have been travelling throughout the Sierra Nevada mountain range for the past 6 summers. I am an avid backpacker and enjoy visiting the wilderness areas of the Sierra's, particularly the southern Sierra in the vicinity of Sequoia National Park. I enjoy the serenity that this area provides and the escape from the techno-industrial world which already dominates much of the state of California. In recent years the very reason that I choose to visit these backcountry areas has been severely, and adversely, altered by military overflights. Some days there is a steady roar from military jets overhead, and this is often accompanied by the jet flying less than 500ft. overhead. If you have never visited such a place, (as Cold Tree meadow in Sequoia National Park), I mean to tell you that the experience is shattered by the single F-18 flying low overhead, let alone the steady stream that seems to be the norm of the summer of 1997. I use the F-18 as an example because they seem to be the ones most frequently sighted over the southern-central Sierras. This is an appalling development in an age when our wilderness areas seem to be shrinking.

Now I have heard that the Lemoore Naval Air Station has a proposal to increase the F-18 fighter ~~flight~~ fleet by 92 jets. I am vehemently opposed to such actions, in light of the current state of violations by military jets of Sierra Nevada wilderness areas. How does the military plan to address the present problem, while increasing the number of F/A-18's in the skies over our National Parks? Currently military overflights of the Sierra Nevada are violating the very thing they are paid to protect. I am speaking of freedom. I am requesting that the Navy analyze, and disclose how the addition of 92 fighter jets to its fleet at Lemoore NAS will exacerbate existing problems with overflights of the southern-central Sierra Nevada. I am further requesting that the military recognize and address, the current problem of military overflights of Sierra Nevada wilderness areas. 69-A 69-B

Thank you for considering these requests. I will be anxious to hear, and see, what the Navy plans to do.

Sincerely,

Robert W Edwards

- Letter 69 –
Robert Pilewski
Response to Comments

69-A Please see the response to comments 2-J and 2-M for measures that have been taken or considered by the Navy to alleviate noise concerns by national park and wilderness users.

69-B An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS.

Commanding Officer
Naval Facilities Engineering
900 Commodore Dr.
ATTN: Mr. Surinder Sikand
Code 70311
re: DEIS for location of FA-18
on the west coast

Dear Mr. Sikand,

I am an advocate of wilderness areas in the Sierra Nevada Mts. of California. In recent years I have noticed the noise levels created by military aircraft over such areas on the increase, and subsequently, detracting from the experience one hopes to find by visiting such places. Last year, in particular, the southern Sierra seemed to be under attack by nonstop F-18's flying low over Sequoia National Park. I am requesting that the military recognize that there is a problem and take measures to alleviate such a problem. Now, I understand that Lemoore NAS proposes to increase the current fleet of F-18 fighter jets by 92 aircraft. This is an appalling development in light of the current state of affairs in the skies over our so-called wilderness areas. As a U.S. taxpayer I am requesting that the military not allow an increase of F-18 jets in any military installation in the state of California, and additionally, take appropriate measures to insure that noise levels of any kind in the skies over wilderness areas are eliminated. 70-A 70-B 70-C

Thank you for your time. I will anxiously be awaiting a solution to the problem and an appropriate return of serenity to our wilderness.

Sincerely,

Juan Cullum
To okeep th. UV.
Durango Colo. 81301

- Letter 70 –
Juan Cullum
Response to Comments

70-A An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS. Also please see the response to comment 2-D concerning measures to curtail violations of altitude restrictions over national parks and wilderness areas.

70-B Comment is noted.

70-C Please see the response to comment 2-F for a discussion of potential noise effects of the proposed action on national parks and wilderness areas and the response to comment 2-M regarding measures considered by the Navy to address overflight concerns.

Commanding Officer
Naval Facilities Engineering
900 Commodore Dr.
ATTN: Mr. Surinder Sikand
Code 70311
re: DEIS for location of FA-18
on the west coast

Dear Mr. Sikand,

I am an advocate of wilderness areas in the Sierra Nevada Mts. of California. In recent years I have noticed the noise levels created by military aircraft over such areas on the increase, and subsequently, detracting from the experience one hopes to find by visiting such places. Last year, in particular, the southern Sierra seemed to be under attack by nonstop F-18's flying low over Sequoia National Park. I am requesting that the military recognize that there is a problem and take measures to alleviate such a problem. Now, I understand that Lemoore NAS proposes to increase the current fleet of F-18 fighter jets by 92 aircraft. This is an appalling development in light of the current state of affairs in the skies over our so-called wilderness areas. As a U.S. taxpayer I am requesting that the military not allow an increase of F-18 jets in any military installation in the state of California, and additionally, take appropriate measures to insure that noise levels of any kind in the skies over wilderness areas are eliminated. 71-A 71-B 71-C

Thank you for your time. I will anxiously be awaiting a solution to the problem and an appropriate return of serenity to our wilderness.

Sincerely,

mary ellen beard

mary ellen beard
661 Ridge Rd
Durango Co 81301

- Letter 71 –
Mary Ellen Beard
Response to Comments

71-A An analysis of potential effects of overflights on national parks and wilderness areas has been added to sections 3.1 and 4.1, Land Use and Airspace, and to sections 3.7 and 4.7, Noise, of the final EIS. Also please see the response to comment 2-D concerning measures to curtail violations of altitude restrictions over national parks and wilderness areas

71-B Comment is noted.

71-C Please see the response to comment 2-F for a discussion of potential noise effects of the proposed action on national parks and wilderness areas and the response to comment 2-M regarding measures considered by the Navy to address overflight concerns.

AIRPLANE IS LOCATED THERE'S AN INCREASE IN THE AMOUNT OF HAZARDOUS WASTE PRODUCED BY THE AIRPLANE, BY THE INCREASE OF AIRPLANES AND SO THEREFORE, IT BECOMES AN ITEM THAT WE HAVE TO MITIGATE AND ARRANGE FOR AS FAR AS SERVICING TO THOSE HAZARDOUS WASTE MATERIALS.

OVERALL, THE PROPOSAL IS THAT THE AIRPLANES BE LOCATED AT NAS LEMOORE, CALIFORNIA. HOWEVER, THAT IS NOT BY ANY MEANS A FINAL ACTION. THE SECRETARY OF THE NAVY WILL HAVE TO READ THE FINAL REPORT AND COME TO THAT CONCLUSION ON THEIR OWN.

WITH THAT, I'D LIKE TO OPEN IT UP TO ANY PUBLIC COMMENTS THAT YOU ALL MIGHT HAVE. LIKE I SAID, IF YOU CARE TO MAKE COMMENTS, PLEASE STATE YOUR NAME, YOUR AFFILIATION TO WHATEVER GROUP YOU REPRESENT AND PLEASE SPEAK LOUDLY FOR OUR COURT REPORTER TO HEAR YOU.

ARE THERE ANY COMMENTS? GO AHEAD AND STATE YOUR NAME AND MAKE YOUR COMMENT.

MICHAEL REMINGTON: MICHAEL REMINGTON WITH THE IMPERIAL IRRIGATION DISTRICT.

THIS IS THE FIRST TIME I HAVE SEEN THE DOCUMENT AND LOOKING AT YOUR FIGURES UP THERE, WHY IS IT THAT AT LEMOORE YOU'RE SHOWING A SIGNIFICANT BUT MITIGABLE IMPACT AT SCHOOLS BUT NAF EL CENTRO WHICH HAS MORE AIRCRAFT, MORE PERSONNEL, MORE FAMILY, YOU SHOW NO IMPACT TO THE SCHOOLS. 72-A

CDR TOMKINS: WE'LL HAVE TO TAKE A LOOK AT THAT.

PHYLLIS POTTER: I'M PHYLLIS POTTER WITH TETRA

TECH. WE ARE THE CONSULTANT THAT PREPARED THE EIS FOR THE NAVY AND THE REASON THAT THERE'S A DIFFERENCE IN IMPACT ON SCHOOLS BETWEEN LEMOORE AND EL CENTRO IS BECAUSE OF THE CAPACITY OF THE SCHOOLS. THE SCHOOLS IN LEMOORE HAVE GOT A LOT OF CAPACITY, THEY ARE NOT OVERCROWDED AT THIS POINT IN TIME. DID I SAY LEMOORE? AT EL CENTRO. THE SCHOOLS IN EL CENTRO ARE NOT OVERCROWDED; THEREFORE, THEY HAVE THE CAPACITY TO HANDLE ADDITIONAL STUDENTS WHEREAS THE SCHOOLS, THE ONE IN LEMOORE ARE AT CAPACITY AND THAT'S THE REASON FOR THE DIFFERENT CONCLUSIONS.

CDR TOMPKINS: ANY OTHER COMMENTS? WELL, WITHOUT ANY MORE COMMENTS, I WILL-- I'M SORRY.

RICHARD WILSON: RICH WILSON, NAF EL CENTRO FIRE PROTECTION.

I'VE BEEN TO A COUPLE OF THESE AND A QUESTION I HAVE IS WE HAVEN'T HAD THE SQUADRON COME HERE, IT'S ALWAYS GONE SOMEPLACE ELSE. COULD YOU COMMENT ON SOME OF THE OTHER LOCATIONS? ALWAYS SEEMS LIKE THE PRIME LOCATION THAT THE NAVY SELECTS HAS ALSO ENDED UP BEING THE PRIME LOCATION TO WHERE THE END RESULT OF THE AIRCRAFT ARRIVES. I DON'T KNOW, MAYBE I'M A LITTLE CYNICAL ON THIS BUT IT JUST SEEMS LIKE THE DECISION HAS ALREADY BEEN MADE. ON THE PAST SQUADRONS THEY HAVE ALL GONE SOMEPLACE ELSE. 72-B

WE HAVE HEARD TALK, WE'VE TALKED ABOUT THE SCHOOLS, THE HOUSING, GOING DOWN THE LIST ACCORDING TO THE STUDY HERE, THE RUNWAYS, THE RANGES, THE OPERATIONS, ON AND ON AND ON

THAT WE CAN PROVIDE HERE AND WE HAVE DONE THE SAME THING WITH THE OTHER AIRCRAFT, THE OTHER SQUADRONS THAT WE HAVE TALKED ABOUT AND THEY STILL GO SOMEPLACE ELSE.

IT IS A BAD AREA AS FAR AS THE HEAT OBVIOUSLY. WE KNOW THAT. A LOT OF PEOPLE DON'T WANT TO COME HERE BECAUSE IT'S TOO HOT IN THE SUMMERTIME BUT IT HAS ONE OF THE BETTER SCHOOL SYSTEMS IN THE STATE OF CALIFORNIA. THAT WAS STATED BY THE SUPERINTENDENT OF THE SCHOOLS AT THE LAST MEETING WE HAD. FOR THE KIDS' EDUCATION IT'S HIGHER THAN IN THOSE OTHER AREAS AND IT WAS STATED HERE AT THE LAST MEETING THAT WE HAD FOR THE OTHER SQUADRON, I THINK IT WAS E-2 I BELIEVE.

THE IRRIGATION, I.I.D WAS TALKED ABOUT. THERE WAS A PROBLEM WITH WATER AND THE FIGURES WERE WRONG ON THAT AND NOW EVERYTHING WAS OKAY ON THIS.

AND THERE IS A NUMBER OF THINGS HERE AND WE TALKED ABOUT HOW MANY TAKEOFFS AND LANDINGS. I BELIEVE, CORRECT ME IF I'M WRONG, WITH OUR PUBLIC WORKS OFFICER HERE, THAT THIS FACILITY PROVIDES MORE TAKEOFFS AND LANDINGS THAN ALMOST ANY NAVAL FACILITY IN D.O.D. YOU CAN CORRECT ME IF I'M WRONG ON THAT.

ANYWAY, SORTIES AND THE AIRCRAFT COME IN AND THEY BOUNCE AND THEY DO AIRCRAFT TAKEOFFS AND LANDINGS AND ULP'S, THAT'S WHAT WE DO. WE SUPPORT THE FLEET FOR TRAINING AND IF THIS IS WHAT WE'RE LOOKING FOR, THIS IS THE PLACE YOU NEED TO BE. THE BASE IS HERE TO SUPPORT THE FLEET. JUST WHAT YOU'RE TALKING ABOUT, SUPPORT THESE AIRCRAFT. WITHOUT THESE

AIRCRAFT WE DON'T EXIST. WE GO AWAY. WHICH IMPACTS THE FAMILIES AND THE LOCAL COMMUNITY.

I MADE A LOT OF STATEMENTS HERE, SOMETIMES I TALK A LITTLE TOO MUCH BUT THE OTHER AIRCRAFT, DO YOU HAVE ANY INFORMATION ON THE OTHER AIRCRAFT WHERE THE PRIME LOCATION IS SELECTED IN THOSE OTHER IMPACT STUDIES?

CDR TOMKINS: I DON'T HAVE THAT INFORMATION, NO.

RICHARD WILSON: OKAY. WE CAN PROVIDE THE SERVICE HERE. THERE IS SOME CONSTRUCTION THAT WAS MENTIONED AND YEAH, THAT'S A FACT AND I CAN SEE THAT BUT PRIME LOCATION VERSUS THE EDUCATION OF THE KIDS, OVERCROWDED SCHOOLS, I THINK ALL IN ALL OUR LOCATION IS BETTER THAN LEMOORE FOR THAT.

AND ALMOST EVERY TYPE OF AIRCRAFT FLOATS THROUGH HERE AND TRAINED AT NAF EL CENTRO THROUGHOUT THE YEAR. I DON'T KNOW OF ANY AIRCRAFT THAT WOULD BE FLYING THROUGHOUT THIS STUDY HERE THAT HASN'T COME HERE TO TRAIN HERE SO MY COMMENTS ARE MORE OF A STATEMENT THAN ANYTHING ELSE AND READING, GOING THROUGH BECAUSE I JUST SAW THIS TODAY, I WENT THROUGH ABOUT HALF OF YOUR BOOK HERE AND MADE LITTLE ASTERISKS ON THE THINGS THAT WE CAN DO AND I'M SURE PROBABLY LEMOORE CAN ALSO BUT WE HAVE MORE ROOM TO GROW.

THE AIR SPACE AROUND, WHICH I'M SURE YOU'RE AWARE OF, THE APPROACH, THERE'S MILES AROUND THE ENTIRE FACILITY. THE RANGES JUST NORTHWEST AND NORTHEAST OF HERE ARE ACCESSIBLE. IT'S A SHORT DISTANCE. THE RUNWAY'S JUST BEEN

REFURBISHED. SO THERE'S A LOT OF PLUSES THERE. NOW, I'M SURE LEMOORE COULD PROBABLY COME UP WITH SOME TOO BUT THE BOTTOM LINE ON THIS IS WE CAN DO THE JOB, WE CAN SUPPORT THE FLEET, WE CAN SUPPORT THE AIRCRAFT. 72-C

CDR TOMKINS: OKAY. THANK YOU VERY MUCH.

RANDY CALDWELL: HI. MY NAME IS RANDY CALDWELL WITH THE INTERNATIONAL ASSOCIATION OF FIREFIGHTERS AND I'M WITH THE FIRE DEPARTMENT TOO.

I JUST WANT TO MAKE A COUPLE COMMENTS. ANYWHERE YOU GO ON OUR BASE THERE'S GOING TO BE THE OWLS, YOU KNOW. 72-D THEY'RE ALL AROUND OUR HANGER, YOU KNOW, THAT'S WHERE WE'RE AT, YOU KNOW, AND JUST WANT TO MAKE REAL QUICK COMMENT ON THE WEATHER. WE HAVE ONE OF THE BEST FLYING WEATHERS IN THE UNITED STATES, 360 DAYS OUT OF THE YEAR WE HAVE PERFECT FLYING WEATHER AND PROBABLY LEMOORE IS NEAR THE COAST AND PROBABLY GET FOGGED IN THERE AND I JUST WANT TO KNOW WAS THAT SOMETHING THAT WAS CONSIDERED IN YOUR STUDY? 72-E

CDR TOMKINS: YES, IT WAS A FACTOR IN OUR ENVIRONMENTAL. IT'S NOT HOW WE AFFECT IT, IT'S THE FACT THAT IT AFFECTS OPERATIONS.

RANDY CALDWELL: THAT'S ALL I HAVE.

CDR TOMPKINS: ANYBODY ELSE?

ETHAN SCOTT: ETHAN SCOTT, UNION PRESIDENT WITH LOCAL 156 AND ALSO WITH THE FIRE DEPARTMENT AT NAF.

LISTENING TO THIS I FEEL LIKE WE'RE BEING LED IN A DOG AND PONY SHOW LIKE YOU'RE GOING THROUGH A MOTION BECAUSE

YOU HAVE TO. I DON'T FEEL THAT AN ENVIRONMENTAL IMPACT STATEMENT SHOULD BE AN ECONOMICAL IMPACT STATEMENT BECAUSE AS MR. WILSON SAID, AS MR. CALDWELL SAID, IT'S NOT THE ENVIRONMENT AROUND HERE THAT'S GOING TO BE AFFECTED. IT'S THE FACT THAT WHY WOULD YOU WANT TO COME TO NAF BECAUSE IT'S HOT. THEY DON'T WANT TO INVEST THE MONEY TO FIX A BASE UP THAT LIKE MR. WILSON SAYS SEES MORE FLYING AND MORE AIRCRAFT THAN LEMOORE WILL SEE. WE'LL SEE MORE IN A COUPLE OF MONTHS THAN THEY'LL SEE IN ALMOST A YEAR SO I REALLY DON'T THINK IT'S ENVIRONMENTAL FACTOR BECAUSE I.I.D. SAID WE CAN HANDLE IT, SCHOOL DISTRICT CAN HANDLE IT, EVERYTHING AROUND HERE CAN HANDLE IT. IN FACT, THE WORSE THING THAT IT WOULD POSSIBLY DO TO IMPERIAL VALLEY IS INCREASE THE FINANCIAL INCOME AND THE ECONOMIC INCOME WHICH IN TURN WOULD DROP THE UNEMPLOYMENT RATE OF IMPERIAL VALLEY AS WELL AS BOOST THE ECONOMY OF THE VALLEY AND GOD FORBID THE NAVY FIXES UP A BASE THAT'S LONG OVERDUE. 72-F

THAT'S ALL I HAVE TO SAY.

CDR TOMPKINS: THANK YOU. ANYONE ELSE?

DENNIS ROBERTSON: MY NAME IS DENNIS ROBERTSON. I AM THE VICE-PRESIDENT OF LOCAL 156, ALSO A FIREFIGHTER AT NAF EL CENTRO AND THE ONLY COMMENT I HAVE IS LAST-- I BELIEVE IT WAS LAST NIGHT OR THE NIGHT BEFORE THE COUNTY BOARD OF SUPERVISORS MET WITH CAPTAIN BADGER AND IT WAS-- A COMMENT WAS MADE ON THE RADIO THIS MORNING ABOUT THE MEETING THAT TOOK PLACE AND THE COMMENT THAT WAS MADE BY THE BOARD OF

SUPERVISORS TO CAPTAIN BADGER WAS THEY AREN'T ENCROACHING ON THE PROPERTY AROUND THE NAVAL AIR FACILITY EL CENTRO AND THEY WONDERED WHY NO SQUADRONS ARE COMING DOWN HERE AND BASICALLY HE DIDN'T ATTACK OR THEY DIDN'T ATTRACT CAPTAIN BADGER, THEY ATTACKED THE NAVY IN GENERAL SAYING, YOU KNOW, WE'VE BEEN HERE, WE'VE BEEN PATIENT, WE HAVEN'T MESSED WITH YOU PEOPLE, ALL WE WANT BASICALLY IS THE FINANCIAL INCOME COMING INTO THIS VALLEY TO GIVE IT A BETTER FINANCIAL BASE.

AND HE MADE A STATEMENT THAT I'M TRYING TO GET SOME CLARIFICATION ON SO THAT I UNDERSTAND IT. HE SAID DON'T COUNT US OUT YET BECAUSE ONE OF THE THINGS THAT'S HAPPENING RIGHT NOW IS YOU PEOPLE ARE NOT ENCROACHING ON ME AT THE NAVAL AIR FACILITY BUT THEY ARE ENCROACHING ON THE PEOPLE UP AT LEMOORE. NOW, IS THERE SOMETHING THAT'S NOT IN THIS IMPACT STATEMENT THAT THE COMMUNITY IS PUTTING PRESSURE NOT TO PUT THE AIRPLANES UP THERE AND WE STILL MIGHT HAVE A CHANCE OTHER THAN WHAT YOU SAID EARLIER? A BETTER CHANCE MAYBE WOULD BE A BETTER WORD TO PUT IT, BETTER WAY TO PUT IT. IS THERE ANY LIGHT YOU CAN SHED ON THIS?

DR. TOMPKINS: WELL, THE HONEST TRUTH IS THERE IS NOT REALLY AN ENCROACHMENT ON THE AREA OF LEMOORE. THE LEMOORE BASE IS MUCH LIKE EL CENTRO IN THE FACT THAT IT'S OUT ALMOST SEVEN MILES AWAY FROM ALMOST EVERYTHING AROUND IT SO THERE HASN'T BEEN AN ENCROACHMENT PROBLEM WITH THE CITY OF LEMOORE YET EITHER AND THAT WASN'T REALLY BROUGHT INTO A FACTOR AT EITHER SITE DURING OUR STUDY.

DENNIS ROBERTSON: OKAY, THANKS.

CDR TOMPKINS: ANYONE ELSE? OKAY. WITH THAT I WILL END BY SAYING THAT WE ARE STILL IN THE PUBLIC COMMENT PERIOD. IF YOU CARE TO PUT IN WRITING ANY MORE COMMENTS OR FAX THEM, WE HAVE SURINDER SIKAND HERE FROM SAN BRUNO, CALIFORNIA. HE WILL TAKE ANY OF YOUR COMMENTS, ANY OF YOUR QUESTIONS, FAX NUMBERS LISTED HERE WITH E-MAIL, WE ENCOURAGE IT. AND A REMINDER THAT FEBRUARY 2ND IS THE CUT-OFF DATE FOR US TO GO IN THE FINAL REPORT ON THE ENF.

AND I DO THANK YOU FOR COMING OUT TONIGHT.

(THE HEARING CONCLUDED AT 7:35 P.M.)

* * *

STATE OF CALIFORNIA,)
) SS:
COUNTY OF IMPERIAL.)

I, CECELIA A. BROWN, CERTIFIED SHORTHAND REPORTER, HOLDING C.S.R. LICENSE NUMBER 1243, WITHIN AND FOR THE STATE OF CALIFORNIA, DO CERTIFY:

THAT THE ENVIRONMENTAL IMPACT STATEMENT PUBLIC HEARING WAS TAKEN DOWN BY ME IN STENOTYPE AT THE TIME AND PLACE HEREIN STATED AND WAS THEREAFTER REDUCED TO TYPEWRITING UNDER MY DIRECTION AND SUPERVISION AND THE FOREGOING TRANSCRIPT, PAGES 1 THROUGH 19, INCLUSIVE, IS A FULL, TRUE AND CORRECT TRANSCRIPT OF MY SAID STENOTYPE NOTES.

WITNESS MY SIGNATURE THIS 18TH DAY OF JANUARY, 1998.

CECELIA A. BROWN, C.S.R. 1243

- Letter 72 –
Public Hearing, NAS Lemoore, January 7, 1998
Response to Comments

72-A The difference in the degree of impact the proposed action would have on schools between NAF El Centro and NAS Lemoore reflects differences in the ability of the two school systems to accommodate the additional students resulting from the proposed action. Schools in the vicinity of NAF El Centro could currently accommodate the additional students that would be generated by the proposed action.

72-B The alternatives considered are discussed in Section 2.4 of the final EIS. The capacity of the alternative sites to support the F/A-18E/F aircraft determines the analyzed alternatives and the preferred alternative.

72-C Your support for basing the F/A-18E/F aircraft at NAF El Centro is noted.

72-D A discussion of the burrowing owl is presented in Section 4.8.2 of the final EIS and is identified as a significant but mitigable impact at NAF El Centro.

72-E Weather at the proposed installations was not one of the site selection criteria detailed in Section 2.2 of the final EIS.

72-F As noted in the discussion of socioeconomic impacts in Section 4.3 of the final EIS, the proposed action would have a positive effect on the economy of the NAF El Centro region.

then go formulate the proper response for it, making it a part of the final report, and that and the rest of our report goes back to D.C. for the people in the Secretary of the Navy's office to read and weigh.

So is there a Brian Huse? Please make sure we speak loud.

MR. HUSE: My name is Brian Huse. I'm the Pacific Regional Director for the National Parks and Conservation Association. NPCA is America's only private nonprofit citizen's organization dedicated solely to protecting, preserving and enhancing the U.S. national parks system. NPCA was founded in 1919 and currently has over 475,000 members, including over 65,000 in California. We appreciate the opportunity to provide input on the Draft Environmental Impact Statement for the basing of the U.S. Pacific Fleet, the F/A-18 E/F Hornet. At this juncture we are not arguing that the Lemoore alternative is untenable. We do wish to emphasize that the Navy has a legal responsibility to publicly disclose the potential of this project to impact Joshua Tree and Sequoia and Kings Canyon National Park wilderness and identify mitigation measures that are effective to alleviate these impacts. Absent this, the draft document is fundamentally incomplete. 73-A

This exclusion of the analysis is puzzling. The National Park Service, numerous environmental organizations and concerned citizens repeatedly raised such questions during the scoping process so that they would be addressed in this draft document. Despite this and despite the fact that NPS regularly contacted the Navy to express its concerns, the Navy has failed to consult with the National Park Service. In fact, the National Park Service was not even notified when this draft document was released for public review and only recently discovered it was available through secondary channels.

Unauthorized low-level military flights from Lemoore have routinely destroyed the tranquility of the high Sierra and desert wilderness areas. There is currently no effective enforcement mechanism. It is not apparent that the situation will improve. This magnifies our concerns as to how the near doubling of flight operations will translate into traffic over national park wilderness. 73-B

Intrusive low-level military overflights have shattered the natural quiet of park wilderness, caused at least two "near misses" with park search-and-rescue helicopters, threatened human safety and taken an unmeasured toll on wildlife such as bighorn sheep, 73-C

stressed by the startling roar of airplane engines. The draft document's failure to address these issues violates the National Environmental Policy Act and makes the draft document fundamentally incomplete. The National Environmental Policy Act requires an agency to, quote, "...identify and develop methods and procedures...which will insure that presently unqualified environmental amenities and values may be given appropriate consideration in decision-making." It also requires the Navy to, quote, "consult with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved," unquote.

To comply with NEPA, the Navy must amend or supplement the draft and reissue this for public review. This revision should address the issues raised by the public and the National Park Service by analyzing wilderness impacts and providing appropriate mitigation measures. For example, the EIS could identify routing or scheduling strategies that alleviate impacts to the park. These mitigation measures should be guided by periods of high visitation or seasons during which species are less sensitive to the disturbance of over-flying aircraft. This is also an opportunity to develop better enforcement mechanisms

73-D

to ensure compliance with the 3,000-foot AGL advisory. The modified draft also needs to contain some explanation and map of flight routes and volumes in the surrounding region, especially over National Park areas. Additionally, there needs to be an expanded cumulative-impact section which addresses the cumulative impacts of current and anticipated air traffic from not only Lemoore Naval Air Station, but the several other agencies and bases that share R2508. 73-D 73-E

This brings up one thing that I found out this morning, is that the Navy has three other environmental-impact statements either in process right now or just completing the process, not only dealing with the Hornet here at Lemoore, but you also have a rebasing of the Orions at Point Magu and a scoping process underway for modifications in operations in the sea range that runs off Point Magu from the northern Channel Islands down towards the southern Channel Islands. It seems to us that this requires programmatic environmental-impact statements. Obviously, these three operations have relationships to each other and would entail cumulative impacts that are far greater than each of the individual proposals would have evaluations for. 73-F

To finish up, the Navy has failed to identify 73-G

several interested parties and the National Park Service of the availability of this document. Therefore, we request a 60-day extension of the comment period to provide the public adequate time to review the document and provide insightful comments. Thank you once again for the opportunity to comment. 73-G

CDR TOMKINS: Jack Shook.

MR. SHOOK: I'm representing the Backcountry Horsemen of California, and I'd like to sort of follow up on what this man said about flights over the national park. I was so incensed in September that I wrote this article to the Visalia Times Delta, and it was printed in the paper there:

"Military Flights (Crashes?) Headline in the near future: Military Jet and Helicopter Collide - 3 dead, Sequoia Park Scene of Disaster.

"Backcountry rangers have reported 69 - low-altitude flights below the minimum 3,000 feet that aircraft are to maintain over the park. On September 23rd I witnessed five such flights 100 to 300 feet above the trees in Kern Canyon at a speed of 500 to 700 miles per hour. These were Navy F-15's and F-18's" -- I have to say that we have approximately five seconds to identify these planes when they come over, since they are low and we're in the trees. This

was are at the Kern River ranger's station that I witnessed these.

"At the time there were 6 Park Service aircraft involved in a search and rescue and a fire suppression in this area. I myself, I enjoy riding and packing into the back country with my family and friends, but can you imagine" -- and this happened to me -- "going up a narrow trail in Kern Canyon with two young girls" -- one of which was my daughter, another young girl and her father, "seven head of horses and mules and a jet" -- this happened to be an A-6 at the time -- "flying below you at a distance of a hundred yards? Military officials at China Lake, Edwards and Lemoore have denied that such flights happen. Although a few 'Top Guns' have lost a day of training, we've found out, for such a minor infraction. If there is a stock-related death due to a low flight, it will only make the obituary column. When will it stop? Maybe when it makes the headlines!"

I have to add that I've seen two B-52's coming down that canyon. We have witnessed a Stealth before the Stealth was even recognized as a legitimate aircraft, and these flights happen all the time. Every time I go into the backcountry, I witness a low flight. At the Kern River ranger's station, the

landing zone for the helicopters is less than an acre, surrounded by 60- to 80-foot trees. That means the helicopter has to rise up fairly -- just almost vertical out of there. At that period of time, whenever he comes up, if there's a low-flying aircraft, it's just going to take some lives, that's all there is to it. There's been several fires in the Kern River drainage in the last three years where helicopters were used for suppression, and there was one near miss -- probably one which my friend stated -- I mean, it came within a hundred yards or so of the helicopter.

And my response -- in the response I expect from the Navy, I would like to know if you recognize that these flights actually happen and what measures the Navy will take to adhere to the present restrictions. Thank you. 73-H

CDR TOMKINS: Thank you. Linda Mutch.

MS. MUTCH: My name is Linda Mutch, and I'm representing Tulare County Audubon Society, which has approximately 380 members in Tulare County. We're concerned also about the lack of mention in the draft EIS of the current noise impacts of the military flights over Sierra Nevada wilderness that occur both in Sequoia and Kings Canyon National Parks and also the surrounding national forest lands, which also contain

wilderness. As wilderness users, we find current levels of military jet noise over Sierra Nevada wilderness unacceptable, and we understand that the military has a self-imposed flight-level restriction of 3,000 feet above ground level. But even at 3,000 feet, one hears a jet for one to two minutes before the sound finally dies away, and the flights over these areas are dozens per day. The draft EIS states that, quote, "a less than significant noise impact would result from increased aircraft operations at NAS Lemoore" and that "off-base land uses generally would not be exposed to incompatible noise levels," unquote. The document appears not to consider that off-base land uses include, for many people, a long-awaited wilderness vacation far away from the noise and stresses of civilization. Few wilderness users would find jets roaring overhead compatible with the wilderness experience, nor would they agree that more flights would add a less significant impact.

America was the first country in the world to have designated wilderness, and it's something we should be proud of and something we should be willing to fight for. The solitude happens to be one of the primary defining characteristics of the wilderness. Military pilots can still practice low-flying flight 73-I

without flying over wilderness, and we would like to request that the final EIS account for the potential increased noise impacts on these very popular wilderness areas and that the Navy raise its minimum allowable flight levels over wilderness to approximately 10,000 feet above ground level. And we thank you for the opportunity to comment. 73-I

CDR TOMKINS: Thank you. Ralph Moore.

MR. MOORE: Good evening. My name is Ralph Moore, and I work with the National Park Service. I'm currently the wilderness coordinator for Sequoia and Kings Canyon National Parks. I'm sure many of you have been there. It is a phenomenal place. Each year we have 1.3 million visitors that come to the parks. 1.3 million visitors seeking a place that is different than where they live, 1.3 million people seeking a pace of life that's a little bit different from what they encounterer each day.

In 1996, wilderness visitation in these parks exceeded 95,000 visitor days. Clearly, many visitors want the peaceful feeling that comes from quiet places. These national parks are your national parks, and they were set aside to be your quiet places.

The public lands that underlie the military training routes used by Lemoore constitute part of the

affected environment of the EIS, yet the National Park Service was not consulted during preparation of the draft document. During public scoping sessions we raised a number of concerns, but these have not been addressed in the EIS. The draft EIS failed to recognize that the federal land-management agencies have legitimate concerns regarding military training routes. 73-J

We disagree with the Navy's conclusions included in this EIS. Those federal lands underlying military training routes are adversely impacted by this proposed action. The effects are not localized. We are concerned that an increase in aircraft will result in an increase in training missions over these parks. The Navy has a self-imposed restriction of 3,000 above ground level over this portion of the R2508 complex, yet thus far has been unable to prevent low overflights in this area. We'd like to know what steps will be taken to prevent the increase in number of aircraft to be stationed at Lemoore from exacerbating this problem. 73-K

Low-level military overflights result in visitor complaints each summer. During our public scoping sessions for our Wilderness Management Plan in 1995, we received over 100 letters complaining about

military overflights over these parks. Hikers, climbers, skiers and equestrians have been startled by low-level F-16 overflights. The new F-18's are even louder. The National Park Service needs assurance that visitor safety will not be jeapordized, causing injury to those on the ground, particularly those on horseback.

The noise from military overflights disrupts our visitors' wilderness experience. The overflight issue is both significant and controversial. Safety and the impacts of noise on visitor experiences are important considerations that need to be addressed within this EIS. While both the Department of Defense and the National Park Service have different missions designated by Congress, we must work closely together when these missions appear to conflict. We've been working for 15 years with the Navy and the Air Force to improve the situation concerning low overflights over public lands, but little has changed. We met today with Navy staff at Lemoore to share our concerns. We cannot support an increase in F-18 aircraft at Lemoore without seeing convincing evidence that the concerns to the National Park Service will be addressed. Our visiting public deserves better. Thank you.

CDR TOMKINS: And Frank Gornick.

MR. GORNICK: Good evening. My name is Frank Gornick. I'm the president and superintendent of West Hills Community College District, and since the last time I believe we had an opportunity to address this group, I wanted to keep this process abreast of our progress in terms of providing not only the citizens of Kings County -- and particularly Lemoore -- but also the anticipated residents and personnel at Lemoore Naval Air Station of our progress in providing a comprehensive community college campus to this area.

Phase III of this project includes our first three buildings, and since the last time we had an opportunity to talk to you, this project has been placed on the California Community College Board of Governors' approved list for funding. So the first phase is approved; that's the good news. The bad news is we don't have the money yet. But the significant step is that we have that approved.

In addition to not only West Hills, we have had significant conversations and a partnership agreement with California State University, Fresno. I had an opportunity to talk with Deak Childress to provide the junior and senior and graduate course work that not only would be applicable to the military personnel but also civilians and their residents living

in Hanford and Lemoore, as well as residing on the base.

In addition to that, we have now a space provided on this area for approximately ten acres for an experimental elementary school, a lab school, in conjunction with California State University, Fresno, that will be unique in California, and probably unique in the nation in terms of the way we're designing it.

We have had opportunities to talk with the military providers of the aircraft, and we are in the very preliminary stages of developing joint agreements on an avionics program and other high-tech programs that would assist in the training of not only civilian but military personnel. Look forward to seeing you.

CDR TOMKINS: Thank you. That's all the green cards I have. Are there other people that care to make comments?

With that, I'll finish up by saying our support for this EIS is done through the Engineering Field Activities West, which is up in San Bruno, California. This address here should be on the back page -- right -- of -- if you care to copy it down, any further comments that you care to make, please use this address in getting them. Once again, if you did sign up on the mailing list, you will receive a copy of the

final environmental-impact study when we're completed with that.

And for the court reporter here tonight, if you made a comment and you had a prepared statement, she would appreciate it if she could get a copy of that statement so that she can get it correctly into the record for this evening's meeting.

And with no further comments, that's all we have for tonight. Appreciate everybody coming out.

(Whereupon, Exhibit 1, Letter from Congressman Calvin Dooley, was marked for identification purposes only and attached hereto.)

(Whereupon, Exhibit 2, Letter from California State Senator Jim Costa, was marked for identification purposes only and attached hereto.)

(Whereupon, the proceedings were concluded at approximately 7:45 p.m.)

State of California

County of Fresno

I, TAMARA L. BUCK, License No. 7205, a Certified Shorthand Reporter of the State of California, do hereby certify:

That the said proceeding was taken before me as a Certified Shorthand Reporter at the said time and place and was taken down in shorthand writing by me;

That the said proceeding was thereafter under my direction transcribed with the use of computer-assisted transcription, and that the foregoing transcript constitutes a full, true and correct report of the proceedings which then and there took place;

That I am a disinterested person to the said action.

IN WITNESS WHEREOF, I have hereunto subscribed my hand this 19th day of January, 1998.

Tamara L. Buck
CSR No. 7205